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EXTENSION EDUCATION INSTITUTE

NILOKHERI (HARYANA)

SUMMARY RECORD

OF THE

EIGHTEENTH COURSE

(5-6-1967 to 4-8-1967)

121

Developed by Principals and Instructors

of

Gram Sevak/Sevika Training Centres

DIRECTORATE OF EXTENSION
MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND COOPERATION
GOVERNMENT OF INDIA
NEW DELHI

Ex. 80. 79

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SUMMARY RECORD

OF THE

EIGHTEENTH COURSE

Ex.80.

C O N T E N T S

		Page No
I. INTRODUCTION		
II. SYLLABUS		1
III. LECTURE-CUM-DISCUSSIONS:		
1. Package of practices for dwarf wheats	Ambika Singh	13
2. High yielding varieties training programme at various levels	Badri Singh	17
3. Applied nutrition programme	T.Bahel	24
4. Latest developments in poultry in India	H.P.Tondon	27
5. Role of animal husbandry in agricultural production & the steps suggested for its development	Harbans Singh	37
6. Farmer's training is central to farm production	J.C.Mathur	42
7. Result demonstration	Baldev Singh	50
IV. LESSON PLANS:		57
1. Home management		63
2. Cooking of food		68
3. Formation of gram sabha and gram panchayats and their meeting in U.P.		73
4. Fruit nursery, layout and selection of plants		77
5. Art of milking (hand milking) in buffaloes		81
6. New concept of sanitary well		84
7. Refrigerator for the rural home		87
8. Indoor control on house hold insects and pests		92

9. Small pox - symptoms, mode of spread and measures for its prevention and control 97

10. Infection and its communication 101

11. Disposal of night soil in rural areas by Planning Research and Action Institute type latrine 104

12. Analysing the possibilities of different methods of disposal of waste water in rural areas 109

13. Clean production of milk 114

14. Cultivation of cauliflower 117

15. Factors affecting the selection of site for laying out an orchard 120

V. METHOD DEMONSTRATIONS: 124

1. To increase the beauty of a garden 127

2. Preparation of 0.02% of Endrine solution 129

3. Deep litter system 131

4. Construction of smokeless chullha 133

5. Cheap nutritive dalia 135

6. Layout of mango orchard (square system) 137

7. How to interview a farmer for a farm enquiry in a survey method 139

8. Election of the pradhan of a gram sabha 141

9. Public health - disinfection of water of a well 144

VI. WORKSHOP ON VISIAL AIDS 146

VII. VILLAGE PRACTICALS 150

VIII. STUDY TOUR 151

IX. LIST OF PARTICIPANTS 152

X. LIST OF GUEST SPEAKERS 154

XI. LIST OF TEACHING STAFF 155

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I N T R O D U C T I O N

A group of 16 Instructors including one Vice-Principal from the States of J & K, Punjab, Rajasthan & U.P. attended the 18th course organised for Principals & Instructors of G.T.Cs which commenced on the 5th of June 1967. This group also includes two Home Science Instructresses. The subject-matter of the participants varied greatly. They included Horticulture, Home Science, Panchayats, Cooperation, Agricultural Engineering, Animal Husbandry and Public Health.

The highlights of this course were the preparation and presentation of lesson plans. Each participant was assigned five lesson plans in his/her subject-matter. Two of these lesson plans were presented on the campus itself - one in a group of fellow-workers and the other in a real situation of senior V.L.Ws. A change in the analysis was made in the second round by giving the group an opportunity of practising group methods in class. This booklet includes 15 lesson plans. A complete list of the lesson plans prepared by the Instructors have been given separately.

Another highlight has been the visual aid workshop. The period for the workshop was increased by one day this time to enable the group to develop skills in the preparation and use of visual aids connected with their lesson plans as well as village situations. One of the themes for the group assignment was the latest high yielding variety of I.R.8 in paddy. The group was able to prepare a set of flash cards to teach the farmers the cultivation of this new strain.

Another highlight has heen the preparation and writing of case studies. The Instructors were assigned case studies of the senior Village Level Workers while the teaching staff of the Institute prepared case studies on some of the Instructors. The efforts towards this direction have been included in a separate booklet on case studies for this course.

The other aspects of the training programme were continued as usual. Attention was given to the preparation and presentation of method demonstration plans. In the village practicals new villages were selected this time and individual assignments along with group exercises were included. The study tour was especially fitted into the requirements of the training programme during

their visit to Madhya Pradesh assignments of studying the different aspects of the training programme as well as writing of case studies of Village Level Workers in the field were taken up. As these efforts would make this booklet too voluminous they have been excluded this time.

We are grateful to the number of guest speakers from the Directorate of Extension, Psychological Foundations, the F.A.O and the other agencies. They have been a great help in enriching the programme for these Instructors.

(Herbert W.Butt)
Principal

TENTATIVE SYLLABUS FOR THE EIGHTEENTH COURSE OF PRINCIPALS AND TEACHING STAFF OF GRAMSEVAK/GRAMSEVIKA TRAINING CENTRES IN EXTENSION

I. EXTENSION EDUCATION PROCESS AND ITS ROLE IN RURAL DEVELOPMENT

This course is broad in scope covering such items as current needs and problems in rural development; the Five Year Plans; Organisation; Philosophy and objectives of the National Extension Service and the Community Projects Programme, the nature and role of Extension Education in developing people and helping them learn ways to meet their needs through aided self-help etc. The course is designed to provide a basic grounding and orientation for all trainees.

1. Philosophy and principles of Extension - meaning and scope of extension - basic concepts - change of mental outlook - human behaviour - attitudes - objectives - educational development - voluntary participation - development of the individual and family.

2. Professional competence of Extension worker.

3. Cooperative Extension work in U.S.A., Land Grant Colleges, duties of county agricultural agent, approach to Extension work, comparisons.

4. How farmers accept new ideas - principles of diffusion - adoption process, adopter categories - their characteristics utility in Extension.

5. Meaning of Community Development.

6. Objectives and programme of community development - understanding the community - its needs - dignity of the individual - change in attitudes - educational programme - felt needs - lay leadership - reducing group tensions - voluntary participation - self help.

7. Current problems in Community Development - trends affecting Extension service. Local - institutional - personal - planning and execution - local leadership - supplies - values - evaluation.

8. Fourth Five Year Plan - objectives - salient features in agriculture and Community Development.

9. Trends in Indian planning.

10. Critical analysis of Community Development Programme by various bodies. Balwant Rai Mehta Committee, United Nations Team, Development Commissioners' Conference - Ford Foundation and others.

11. Extension education as a means of increasing agricultural production.

12. Systematic appraisal of current agricultural production programme in India.

II. EXTENSION PROGRAMME PLANNING

This course covers all the basic aspects of planning a programme for villages and blocks and should deal with problems relating to the analysing and evaluation of situations, assessing the felt needs of the people and deciding the objectives and devising the means of attaining them.

1. Problem oriented approach in Extension programme.

2. Programme planning - definition - principles and procedures - analysis of the situation objectives - teaching - content and method - evaluation - reconsideration.

3. Village agricultural production plan - collection of data, problems, solutions, plan of work, follow-up, evaluation.

4. People's participation in programme planning - motivation - ways and means of involving the people.

5. Team work and administrative coordination, principles and practice of administrative coordination - methods of administration - methods of work.

6. Role of local institutions in planning and implementation of development programmes - panchayats, cooperatives and schools.

7. Role of Extension worker in Panchayati Raj.

8. Programme evaluation organisation - its structure, objectives, method of evaluation - appraisal of its work.

9. Follow-up, its importance and significance in training programme with special reference to the village level worker.

10. Extension administration.

11. Developmental needs of youth - rural youth programme - role in agricultural production and community development.

12. Step-by-step organisation of rural youth clubs in the village, block, district and State levels.

13. How to prepare economic projects for youth club members.

III. EXTENSION TEACHING METHODS AND COMMUNICATION PROCESS

This course focuses on the nature and use of the various Extension teaching methods and principles of the use of audio-visual materials in the teaching process. It includes such items as:

a) Principles of learning and teaching.

b) Characteristics and effective use of various teaching methods.

c) Nature and role of visual and audio-visual materials in teaching.

d) Development of skill on the part of the trainees in the actual use of teaching methods.

e) Problems relating to effective communication and ways to solve them.

A. Educational Psychology:

1. Principles of teaching and learning - theories of learning - individual differences, interest and attention.

2. - - - - - - - - - - - - do - - - - - - - - - - -

3. Course outline - its importance - essential elements and how to develop a course outline.

4. - - - - - - - - - - - - do - - - - - - - - - - - -

5. Lesson plans - importance of preplanning criteria of a good lesson plan.

6. - - - - - - - - - - - - do - - - - - - - - - - - -

7. Effective techniques of conducting a class - elements involved - teacher, subject-matter, learner, physical facilities and teaching methods.

8. Adult learner - characteristics, developmental needs of adults, growth and decline of learning abilities, application in Extension.

9. The function and process of counselling - guidance - role of a teacher as a guide - its need and ways to make it effective.

10. Effective techniques of oral communication.

B. The Communication Process:

11. Extension teaching methods, characteristics of Extension methods, selection and use.

12. Problems in communication and how to solve them.

13. Process of communication in teaching - nature and importance of communication, key elements of communication.

14. How to conduct method demonstration? Definition, importance, steps and problems.

15. How to conduct result demonstration? Meaning, significance, steps and limitations.

16. Exhibition - role in Extension education, organisation, effectiveness.

17. Practicals and their educational values - how to conduct practicals.

18. Workshop method of teaching and learning.

C. Audio-visual Education:

19. Audio-visual materials in Extension teaching - significance of audio-visual communication in education - psychological basis of learning through audio-visual materials.

20. Operation, constructional details and techniques of handling the opaque projector and slide projector.

21. Operation, constructional details and threading of a victor 16 mm film projector.

D. Visual Aid Workshop:

i) Audio-visual teaching materials - variou types - merits and demerits.

ii) Chalk board - how to make effective use of it.

iii) Display boards for teaching - content, background devices and management.

iv) Charts - types of charts, their construction and use.

v) Flannelgraphs and flash cards - importance, construction and their effective use.

vi) Poster - criteria of a good poster, effective use in Extension.

vii) Models - types of models, how they are used, planned, designed and constructed.

viii) Puppets - different types of puppets, their features and use as a tool of communication.

ix) Drama - as a tool of Extension agency - advantages and disadvantages.

x) Conducted tours - criteria for planning a tour and some tips on making it educational and effective.

xi) Film strips and film slides - various types their effective use in teaching.

xii) Films - importance in Extension teaching, preview of films - advantages and disadvantages.

xiii) Film appreciation - meaning and principles of reviewing.

xiv) Production and use of literature, e.g. pamphlets, news stories etc.

E. Practicals:

xv) Formulating course outlines in various subject-matter areas.

xvi) Developing of teaching plans in their respective subjects.

xvii) Operation, constructional details and techniques of handling the following projectors:

a) Opaque projector
b) Slide "
c) 16 mm film "

xviii) Preparation of the instructional aids as a group project on an educational topic pertaining to the syllabus at Extension Training Centres for example:

a) Poster
b) Chart
c) Flash cards
d) Flannelgraph
e) Model
f) Puppets
g) Hand made slides

IV. RURAL SOCIOLOGY

A. Basic Information:

1. Rural sociology - definition, scope and importance. Relation of rural sociology to Extension education.

2. Elements of rural society - distinguishing features, structure and analysis - their application to rural society.

B. Leadership in Extension:

3. Objective and need of group - leadership in Extension teaching - definition, classification and traits.

4. Method of selection of leaders in Extension. Basic patterns of leader and group relationship in rural society.

5. Leadership training and development.

C. Rural Community Organisation & Group Mobilisation:

6. Community organisation - principles and method - problem relating to community organisation.

7. Group - type and characteristics of group - cohesiveness conflict - decision making in group - Extension work through group.

D. Cultural Change:

8. Cultural change - definition - types and process of cultural change - factors causing change.

9. How to bring about a change? Methods and techniques.

10. Social and cultural context of planned change.

11. How to write a case study?

E. Group Methods in Extension:

12. Group methods and their importance in Extension teaching process.

13. Various types of group methods. Advantages and limitations:

a) Small group discussion
b) Large group discussion

c) Panel
d) Symposium
e) Forum

14. How to lead a group discussion? Role of a leader in a discussion.

F. Social Psychology:

15. Social psychology, traits of village people. Behaviour pattern - basic knowledge of physical, social and psychological needs of man.

16. Essential elements of social psychology and its bearing on extension teaching process.

G. Evaluation in Extension Teaching:

17. Importance of evaluation - definition - steps in evaluation - criteria of effective evaluation.

18. Methods and techniques - as related to the classroom teaching - village level workers in the block - with a view to find out merits and demerits to improve the training.

V. AGRICULTURAL ECONOMICS AND FARM PLANNING

A. Agricultural Economics:

1. Bhoodan - Gramdan movements - its philosophy, growth and economics - its impact on agricultural production.

2. Principles and process of economic development - characteristics of underdeveloped economy - importance of capital - different sources - savings.

3. Role of agriculture in economic development of India - causes of low yields. Yield comparisons with other countries. Its relation with Extension methods.

4. Population problem - population explosion, its effect on development income and food supplies - causes of decreasing birth rate.

5. Cooperative farming - concept, types and growth in India - its influence on agricultural production. Third Five Year Plan targets.

6. Service cooperatives - function, linking, credit with production, marketing and loan payment. Financial resources - progress, its role in agricultural production and extension education.

7. Cottage and small scale industries - objectives, industrial cooperatives - functions and progress. Various organisations which help in the development of agro-industries. Its importance in agricultural development programme.

8. Steps in conducting social surveys - planning - collection - analysing - presenting data.

9. Methods used in surveys - observation - sampling - statistical methods - interview - schedules - questionnaire etc.

10. I.A.D.P. and I.A.A. programme - origin, objectives, content, administration, supplies and finance, review of progress.

11. - - - - - - - - - - do - - - - - - - - -

12. The new strategy of agricultural production in India.

B. <u>Farm Planning:</u>

13. Farm management - definition, principles, and objectives layout and organisation, Extension and farm management.

14. Fundamentals of farm planning definition, principles, methods, characteristics, use in Extension teaching process.

15. The farm planning process - resources, strong and weak points, improvements introduced, alternative plan, comparisons, execution and problems of farm planning, follow-up and evaluation.

VI. HOME SCIENCE:

1. Home science and its importance.
2. Role of home science in agricultural production.
3. Balanced diet - constituents of balanced diet, balanced diet for different age and occupation groups. Importance of kitchen gardening.
4. Problems of diet and nutrition in rural areas.
5. Budgeting, importance of budgeting - steps in making a budget.
6. Applied nutrition programme.
7. Importance of family planning - merits and demerits of different methods. Contribution of women extension worker in educating village ladies.
8. - - - - - - - - - - do - - - - - - - - - -
9. Problems of home science Extension in Rural areas.
10. Organisation of Mahila Mandals and Balwadis.

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DAILY TIME- TABLE

8.30 AM - 9.45 AM	-	I Session
9.45 " - 10.45 "	-	II "
10.45 " - 11.15 "	-	Break
11.15 " - 12.30 PM	-	III Session.
2.00 PM - 3.00 PM	-	Assignment/library/guidance and counselling.
3.00 " - 4.00 PM	-	IV Session.
4.00 " - 5.00 PM	-	V "
5.30 " - 6.30 "	-	Recreation and games.
6.30 " - 7.30 "	-	As mentioned below.

Monday - Library

Tuesday - Audio-visual programme.

Wednesday- Committee meetings.

Thursday - Free

Friday - Library

Saturday - Free.

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BREAK-UP OF TRAINING PERIOD:

Total No. of days (5-6-67 to 4-8-67)		61 days.
Holidays: Sundays, second saturdays, Gazetted holidays:	10	51 days
Orientation and evaluation.	2	
Village practicals.	6	
Field visits including Pilot visit to villages.	2	

Study tours.	6	
Workshop on A-V aids.	3	
Farmers' training & H.Y.P.	2	
	21	
		30 days
Actual working days available for campus work, talks, practicals, demonstrations, etc.		/ /
		30 days

Break-up of periods:

Lesson plan evaluation.	4
Village practicals preparation.	3
Study tour plans.	2
Finalisation of syllabus.	4
Lesson plan presentation.	30
Lesson plan preparation.	4
Method demons:	20
Institutional seminar discuss:	6
Institutional seminar presentations.	6
Method demons: preparation	4
Presentation of village practical reports.	3
Presentation of study tour reports.	3
Practical training in the handling of AV equipment:	2
Talks and discussions:	59
	150 periods (30 x 5 : - 150 periods).

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PACKAGE OF PRACTICES FOR DWARF WHEATS

Ambika Singh

A successful crop production is the end result of a series of operations like choosing the proper crop to grow (a knowledge of the soil and climatic adaptation of the crop), selecting the correct varieties of crop, providing high quality seed and vigorous young plant, treating the seed properly before planting, selecting and preparing the soil properly, planting seed and setting plants correctly as to time and rate, aiding young plants to get established, cultivating and stimulating growth, controlling and eradicating weeds, controlling harmful pests and diseases and harvesting at proper time. For all these items precise recommendations are available based on agronomic experiments and the experience of successful farmers. These are known as "package of practices". All these have to be provided adequately and in time otherwise the full potential of the variety will not be realized.

Farmers of U.P., Punjab, Rajasthan, Madhya Pradesh and other states have been cultivating 'tall' wheats for time immemorial and have developed the technique of their successful cultivation. Dwarf wheats have been introduced in this country during the past three years. During last season considerable area was put under these wheats. Dwarf wheats have shorter and stronger stems than the tall wheats. This enables them to resist lodging. At present we have Sanora-64 (Dwarf) and Lerma Rojo (semi-dwarf). These wheats can utilize more fertilizers and irrigation without lodging and thus they have a built in capacity to produce more.

FOLLOW INTENSIVE ROTATION

Wheat in north India was grown mostly after Kharif fallow or green manuring. But dwarf wheat being shorter duration have opened new possibilities of multi-cropping. Almost entire area under wheat is now under double and triple cropping. They can be grown after a crop of hybrid maize, hybrid bajra, medium paddy or legumes like guar or lobia for fodder or jowar for fodder. Recent experiments have shown that these varieties could even be grown after early potato, sugarcane or even late paddy. For these latter rotations sowing of wheat can be done as late as fourth week of December or even first week of January. Sanora-64 or Sharboti Sanora-64 are varieties best suited for this purpose.

SELECT A GOOD LAND

We will discuss later the irrigation management for these varieties. It is absolutely necessary to level the field before

planting wheat so that irrigation water could be applied uniformly all over the field. For best result the soil should be well-drained. While preparing the field for sowing wheat, soil should be brought to fine tilth by ploughing deep with a soil turning plough and running a harrow before the pre-sowing irrigation. These operations should be done just after the harvest of preceding Kharif crop. A shallow ploughing should be given after the pre-sowing irrigation and the land should be levelled with a sohage. This will ensure a levelled field. If attack of white ant is feared, 25 kg. of 10% B.H.C. per hectare should be broadcast before the last ploughing. This chemical will prevent the attack of gujhia also.

SEED AND ITS TREATMENT

For obtaining the best result you have to ensure best seed material. The seed should be free from mechanical injury and free from disease causing organisms. It should also be free from mixture with other varieties, other crops and seed of weed. Thus seed should be taken only from the field which has received a very good care and all offtype wheat plants have been rogued. The seed should be treated with an organo-mercurial compound at one part of the chemical for 300 parts of the seed. It destroys parasitic fungi and wards off the attack of soil-born organism to seedlings.

SOW WITH CARE

The seed-bed has to be fine but firm to provide the seed with optimum supply of moisture and air for rapid germination and seedling growth. These wheat should be sown shallow the optimum depth being 6 cm. Seeds of dwarf wheat planted deeper than 8 cm. will be late in emerging, the stand will be reduced and even the number of tillers will be reduced. Sowing with a drill is the best practice but careful Kera will also ensure a good uniform stand. The rows should be 15-22 cm. apart.

SEED-RATE

A seed rate of 100 Kg. per hectare will be satisfactory for most situations. When low tillering varieties like Saonara-64 is sown late, the seed rate should be increased to 125 K.g. or even 150 Kg. for every late planting.

APPLY ADEQUATE FERTILIZERS

These wheats will be sown in intensive rotations with two or three crops during a year. Therefore, careful attention has to be given in manuring the previous as well as this crop. The dwarf varieties of wheat require more nitrogen and utilize it more efficiently. (They produce more wheat grain for every kilo-gram of nitrogen applied to them.) An application of 100-120 Kg.

N per hectare will give near maximum return under many field conditions. There is some danger of lodging at levels above 120 Kg. N per hectare with Lerma Rojo. If you have decided to grow wheat after a fallow, legume or green manure the dose of nitrogen could be reduced to 60-80 Kg. N per hectage. 40-50 Kg. of phosphatic acid may be needed for your crop. Response to potassic fertilizers/also. 60 Kg. of Muriate of Potash per hectare is an adequate dose. If you have facilities for soil test doses of potash and phosphorus could be determined more precisely.

Apply all the phosphatic and potassic fertilizer and two third of nitrogen while sowing or just before sowing. This will ensure vigorous growth early in the season. The remaining one third nitrogen should be applied as a top dressing just prior to the first irrigation (20-30) days after planting). Band placement of phosphatic fertilizer gives the best result.

CONTROL WEEDS

Application of half a kilo of 2,4-D per hectare four weeks after sowing gives a good control of broad leaved weeds.

IRRIGATE REGULARLY

In order to understand the irrigation requirement of wheat we should have a clear idea about its root system. The first roots which sustain the plant are produced from the seed (seminal roots). Then the underground node(mesocoty1) sends roots just below the soil surface. These roots are known as crown roots. It is from this node that tillers are produced It is very important that soil zone around the crown (node(2-3) is moist at the time of crown root formation. If the soil is dry crown root formation and tillering will be restricted. For this reason the first irrigation must come about 21-30 days after planting. Irrigation during grain filling is also important. As a matter of fact the short structure of these wheat enables them to withstand irrigation which is absolutely necessary for grain-filling in an atmosphere of desicating winds. In the absence of this irrigation, considerable reduction in yield occur. Besides these two irrigations depending on soil and climate, 4-6 additional irrigations will be needed.

PROJECT THE CROP

The wheat crop normally does not suffer from any major insect pest. Diseases like rusts, smut and bunt are, however, common. Take prompt control measures.

/may not be obtained universally but on light soils you may have to give potassic fertilizers

KILL THE RATS

Rats cause considerable damage to the wheat crop in the field, especially during the earing stage. Kill rats by poison baiting with zinc phosphide. For this, mix three parts by weight of zinc phosphide, two parts of edible oil or three parts of malasses with 95 or 94 parts by weight of a carrier such as whole or crushed grain or pulses or bran or flour. Rats are better controlled when all farmers of an area get together and take up poison baiting jointly.

HARVEST IN TIME

Mexican wheats mature uniformly. So harvest the crop as soon as it is fully mature. Any delay in harvesting may result in loss due to shattering of grains and eating away by birds and rodents.

If these practices are followed, you will certainly harvest more than 60 quintals per hectare wheat.

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HIGH YIELDING VARIETIES TRAINING PROGRAMME AT VARIOUS LEVELS.

Badri Singh

I-Introduction.

One of the major activities in agricultural production since 1960-61 has been the Intensive Agricultural District Programme started with the support of the Ford Foundation in 7 selected districts all over the country. This has been further extended to 114 districts as an Intensive Agricultural Areas Programme.

As a result of ceaseless research by Indian and foreign scientists several varieties of hybrid maize, jowar and bajra have been evolved suitable to Indian conditions and some of them have given yield as high as 4 to 5 times the present yield. Certain varieties of paddy - such as Taichung Native-I, Tainan-3, I.R.8 can stand high dosage of fertiliser and give yield as high as 5000 to 6000 lbs to an acre. Some new dwarf varieties of Mexican wheat, e.g. Sonora-64, Lerma Rojo have given yields as much as 5000 lbs.per acre.

During 1966-67, an area of 5.94 million acres has been proposed to be brought under the high yielding varieties of foodgrains, in 1967-68, 15 million acres and upto 1970-71, 32.5 million acres.

II- Training programme :

A- Third Plan Period.

The hybrid varieties in Maize, Jowar and Bajra were evolved during different years of the Third Plan and as they were being introduced in I.A.D.P. I.A.A.P. and other areas training of officials and non-officials was undertaken at different levels in/sporddic manner.
/a

B- Fourth Plan Period.

The real work started during the first year of the fourth plan. It has been significantly realized that the key to the success of our efforts in the High-yielding varieties programme lies in the combination of spontaneous,effective

and efficient training and educational programmes with adequate and timely input and services for farmers and extension workers at all levels. The quality of human input is no less important than the others required for increased agricultural production.

III - National Conference on Extension Training.

The National Conference on Extension Training was held at Hyderabad in July 1966. One of the major agenda items for consideration of the conference was the training in High-yielding varieties programme. Its main recommendations were as follows:-

1. The training programme for high yielding varieties is specially necessary in view of the fact that the increased yields of food-grains c an be achieved only through application of science and technology by extension workers and farmers.

2. The States should organise the State Level Training Programme, District level training programme, Block level training programme and training for farmers on High-yielding varities programme before Kharif and Rabi seasons every year. The period of training may be two to three days.

   Special attention and adequate time should be devoted for imparting practical training in the various aspects of crop production in these training camps.

3. The training of farmers is very important for the High-yielding varieties programme.

   (a) The training programme should be conducted near the village so that they do not go to a long distance.

   (b) Training programme should be so designed that it should be simple.

   (c) Stress should be laid on the quality of training rather than on training a large number of farmers.

(d) The training programme should be conducted twice a year before the cropping seasons.

4. Since the training programme for high-yielding varieties at various levels is very important and the States are not able to find adequate funds for this programme, it is recommended that the Government of India may take this training programme as a Centrally Sponsored Scheme and assist the State Governments fully with funds.

IV - <u>Sixth Central Conference of Key Personnel of Intensive Agricultural Programmes.</u>

This conference was held in Vigyan Bhavan, New Delhi in December, 1966 in which the key personnel of I.A.D.P., I.A.A.P, H.V.P. at National, State and District levels participated. One of the main agenda items for discussions before the conference was the training of farmers and officials in H.V.P. The main recommendations of the conference on this subject were as follows.

i) The conference reaffirmed the need of intensive and continuous training and educational programme for the different agencies, organisations, institutions and personnel involved in the implementation of Intensive Agricultural Programme in the Intensive Agricultural District Programme, Intensive Agricultural areas programme and High-yielding varieties programme districts at all levels, namely, National, State District, Block and Village.

ii) It /is recommended that the objectives of each training course proposed to be organised should be clearly defined in advance and a calendar of operations should be worked out with the following details:

1. Place of training.

2. Duration of training.

3. Number of trainees attending the course.

4. Arrangements for boarding and lodging.

5. Content of training.

6. Training aids and other supplies needed.

7. Financial requirements of the training programme.

8. Officer-in-charge of training.

9. Follow-up programme required.

iii) Short one to two days training for farmers on farm locations should regularly be organised before the kharif and rabi seasons.

iv) The State representatives have endorsed the new farmers' training programme including farm women worked out by the Ministry of Food, Agriculture, Community Development and cooperation and have recommended that in order to make full impact in the High-yielding varieties programme areas as early as possible, such Farmers training centres should be established in all the H.V.P. districts at the earliest.

v) It was recommended that the State Governments should take steps to appoint a whole time officer to attend exclusively to training matters at the district level in each I.A.A.P. and H.V.P. districts.

vi) There was a general feeling that certain minimum physical facilities like hostels would have to be provided in each district for organising training programme on a regular and systematic basis. The cost on provision of such facilities should be borne by the Government of India.

The conference also recommended that a peripetatic training scheme should be introduced and that the team may be provided with tents and other facilities by the State Governments.

vii) The involvement of the Universities/ Agricultural/Veterinary Colleges, Research Institutions and Training Centres in various training activities has so far been very limited. If proper planning of the programme is done in advance and heads of these institutions are informed before hand, it will be possible for them to depute their experts to help in conducting various training courses, particularly at Block and village levels where the programme has been very weak so far. They could also help in working out some simple aids for the training programmes. They should, therefore, be fully involved in the future training programmes.

viii) In order to make the training programme purposeful and profitable, the training courses should be organised in relation to the H.V.P. so that the Extension Workers and officers are kept appraised of the latest scientific developments.

V - Revision of Package of Practices for High-Yielding Varieties.

On the basis of the experiences gained in conducting the training in H.V.P. at various levels in Kharif 1966, researches conducted by the various institutes and farmers and the large number of demonstrations conducted through out the country, it was considered necessary that the package of practices for Paddy, Maize, Jowar and Bajra may be revised. The intension was to supply the latest technoligical advances to the officers and farmers at various levels, through out the country for kharif 1967.

With this end in view, a series of meetings were held in Krishi Bhavan in which the subject-matter specialists of the Directorate of Extension, Ford Foundation, Rockefeller Foundation, U.S.A.I.D., C.R.R.I. and National Seeds Corporation took part.

These revised practices were published by the Farm Information Unit of the Directorate of Extension and sent round the country immediately.

VI - National Seeds Corporation.

The National Seeds Corporation has been playing a very useful role in organising training programmes for State level officers at Delhi and other regional centres in the country. After training, in turn, these officers impart training to junior officers and farmers in their areas.

VII - High-yielding Varieties Training Programme at various Levels.

H.V.P. training has been undertaken throughout the country in an energetic manner at State, District, Block and Village levels for Kharif 1967. The emphasis has on practical demonstration of new ideas and avoid theoretical treatment of the high yielding varieties. Each State Government have prepared the calendar of operations for the training programme at various levels, and kept the Directorate informed about it. Subject-matter specialists of the Directorate of Extension at the Centre assisted the State Governments in developing suitable training programme as well as in the conduct of training. The training of staff has been followed by the training of farmers in the areas of high-yielding varieties programme. Short duration training camps (1 - 3 days) have been organised in which farmers were given training in the methods of adoption of package of practices. By the end of May 1967, training at all levels in all the States had been completed except in Rajasthan and Delhi where farmers training is being taken up in June 1967.

VIII - The Problems and Solution.

The high-yielding varieties programme has been conducted for Kharif 1966, Rabi 1966-67 and kharif 1967. During this period, several problems have been thrown up. They may be listed as follows:-

1. At several training camps for farmers the arrangements for practical demonstrations are inadequate. State have been requested to provide all facilities.

2. When the farmers have been effectively trained and educated, prompt and sufficient supplies of fertilizers, plant protection materials etc. are not available.

3. This situation adversely affects agricultural production. State have been requested to look into this.

4. The dormitory and mess facilities for farmer trainees have been insufficient at many places. The new Farmers Training Scheme will remove the difficulties.

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APPLIED NUTRITION PROGRAMME

Miss T. Bahel.

The objectives of Applied Nutrition Programme is to produce food of nutritive value, prepare it in the manner that the nutritive value of the food is not spoiled and consume it. Sanitary handling of food at the time of preparation and consumption is equally important. The objectives of Applied Nutrition Programme can only be achieved through the following points:-

i. Education.

ii. Production.

iii. Consumption i.e. proper utilisation of food.

1. Education:

Nutrition Education is to be spreed by the Block staff, members of Mahila Mandals and other Departments such as Health, Horticulture etc. Only by proper nutrition education, utilisation of nutritive food will increase. This item can also be covered by the Demonstrative Feeding Programme.

Demonstrative Feeding Programme.

The Gram-Sevikas, Mukhya-Sevikas and members of Mahila Mandals are mainly concerned with the Demonstrative Feeding Programme. By giving demonstrations and talks on the preparation of food with least wastage of nutritive value and other points connected with Applied Nutrition Programme the various agencies spread the nutrition education.

UNICEF supplies milk for this programme. Expecting and nursing mothers and pre-school children are given this milk. Various functionaries at the State, District and Block are working for this programme.

The milk is provided in constituted as well as in Powder form.

i. Poultry.

ii. Community Gardens.

iii. School Gardens.

iv. Kitchen Gardens.

i. Poultry

There are poultry units at the block and regional level. 5 to 10% of the produce is given for the Demonstrative Feeding Programme either in kind or in cash. Villagers have taken up to back yard poultry units.

ii. Community Gardens

In the first 3 years of the plan one Community Garden per Block was laid and in the Fourth Five Year Plan the number will be increased. Fruits and vegetables are grown in the Community Gardens. 5 to 10% of its share is given for the Demonstrative Feeding Programme.

iii. School Gardens.

School Gardens are established in a number of schools. The purpose of these Gardens is mainly education in extension. Improved varieties of fruits and vegetables are grown and in some places improved tools and better methods of cultivation are used. The school-children work on these gardens under the guidance of teachers who are trained in gardening and these gardens are supervised by the staff in Agriculture and Horticulture. The produce of the garden is utilized by the school-children.

iv. Kitchen Gardens.

Gram Sevaks/Gram Sevikas educate the villagers in the production of vegetables and fruits by laying out Kitchen Gardens in the field/ in the court-yards of villagers or some open area nearby in the village.

Proper storage of grains, food articles and seed treatment are also some of the items covered by the members of Mahila Mandals. Variety in food always helps in the formation of a balanced diet.

Fishery

There are fish ponds in some of the Applied

Nutrition Programme Blocks. These are maintained by the Panchayats. However, the supply of seed-lings is done by the Fisheries Department. The sale proceeds are taken by the Panchayats and 10 to 20% of the share is for Demonstrative Feeding Programme.

3. Consumption.

Demonstrative Feeding Programme (Item covered on page 1). Simple menus are also given.

Training.

All Planning, Administrative and Technical Officers are associated with this programme. Teachers in the Colleges, Teachers in Schools, field staff of the Blocks, Principals and Instructors of Gram Sewak/ Sewika Training Centres, members of the Panchayati Raj Institutions i.e officials as well as non-official agencies are imparted training in Applied Nutrition Programme. A number of Centres in various States give training to the officials / non-officials. Block level camps are also held at the block headquarters or in the villages.

Reference

1. Master Plan of Operation for an Applied Nutrition Programme in India.

2. Applied Nutrition News letters from F.A.O.

LATEST DEVELOPMENTS IN POULTRY IN INDIA

H.P. Tondon

According to the 1961 Census there were about 96 million fowls in India. This population consisted of about 91 million of indigeneus orgin and 5 million of the improved exotic breeds. The indigenous fowls are of the non-descript mongrel type. No standard breed or variety has been established among them.

The egg production of the hens of the indigenous population is rather poor, being in the neighbourhood of 50 to 60 eggs per annum. The egg size is also very small, the average being about 30 to 35 gms. only. The birds are rather slow growing and of small size. At maturity the males weigh about 1.5 to 2 kg & the females about 1 to 1.5 kg. Among this population, however, there is a variety which possess the potentialities for being developed for table poultry production. These are the Aseel fowls. These are mostly found in Andhra Pradesh. Though there is no standard classification of colour patterns yet certain varieties are popularly recognised on this basis. Examples of such varieties are; Kala (black), Lakha (dark red), Surkha (bright red), Zarda (yellow) etc.

These fowls have compact body and are renowned for their fighting qualities. Aseel fowls have, in fact, been utilised for the production of cornish breed of fowls in foreign countries. The indigenous fowls are usually maintained in small units mostly in rural areas.

Improvement of indigenous fowls:

At the Poultry Research Division, Indian Veterinary Research Institute, Izatnagar, breeding in a strain of indigenous fowls was commenced in the year 1939. This work was started with hatching eggs purchased from the surrounding villages at Izatnagar, Bareilly. The fowls of this strain have been described as mostly of the Brown Leghorn type with speckled and partridge types also occuring.

By selective breedings over a period of 8 years (1940 to 1948), this mongrel stock was raised from 116 to 140 eggs. The egg weight also improved from an average of 39 g to 48 g.

Exotic fowls:

The history of imports of fowls into this country from outside sources can be traced to the early twenties of this century when missionaries from U.K., Australia and America brought birds of breeds like White Leghorns, Rhode Island Reds, Black Minorcas etc. in U.P. and Madras. Since then, imports of birds of improved breeds and strains have continued. These imports have been followed by mass scale reproduction of the imported stock for dissemination in the country. A large number of poultry farms have been established for carrying on the job of this mass scale propagation.

Fundamental research is being carried out in various aspects of poultry production and marketing at the Poultry Research Division, I.V.A.R.I., Izatnagar and a number of Agricultural Universities and Veterinary Colleges. A number of poultry farms of varying sizes have been established by the State Governments in every State. Under the Five Year Plans these State poultry farms have been expanded and five regional poultry farms have been established by the Central Government, one each at Kamlahi, Simla (Himachal Pradesh), Delhi, Bombay (Maharashtra) Bhubaneshwar (Orissa) and Hasserghata, Bangalore (Mysore). At all these institutions breeding work is being carried out to propagate the fowls of improved breeds and strains.

In the private sector also extensive efforts have been made to increase the production of eggs and birds. Over 4000 poultry farms of varying sizes, have been established for the production of eggs and table chickens on commercial lines. As a result of all these activities the number of exotic fowls is fast increasing in the country. In 1961 their number was about 5 million. Since then it must have increased further substantially. Now the stock of exotic breeds consists mainly of white Leghorns and Rhode Island Reds. These are quite popular for egg production. White Leghorns are comparatively lighter birds and are more suitable for egg production. In recent years, White Plymouth Rock, White Cornish, New Hamshire and Australorp fowls have also been imported into the country. White Cornish and White Plymouth Rocks are good for meat production. Rhode Island Reds, Australorps and New Hampshires are duel purpose birds and can be utilised for the production of both eggs and poultry meat.

The average annual egg production of white leg-borns and Rhode Island Reds is about 175.4 eggs and 172 eggs respectively.

Production of quality chickens:

Activities in this direction include upgrading of indigenous hens with male birds of exotic breeds, improvement of purebred exotic fowls, and production of hybrid chicks.

Upgrading of indigenous hens:

The results of breeding experiments have revealed that the grading-up of low production stock of Indian fowls by cocks of foreign breeds is easy, cheap and the quickest method of large scale improvement of ordinary farm stocks as regards egg production and egg size. The average egg production of White Leghorn, Rhode Island Red and Izatnagar Brown Desi at the beginning of the experiment were 165.9, 167.1 and 116.1 eggs respectively. The egg production of the desi X.W.L. first cross and desi M.R.I.R. first cross were 160.8 and 147.4 respectively. As a result of subsequent upgrading from generation to generation up to the sixth cross, there were some fluctuations but definite improvement of the desi fowls. The eggd weights showed progressive improvement. Six generations of up-grading raised the average egg weight from 42 g to 59 g.

The upgrading of Indian poultry with exotic breeds had also been carried out in Bombay (1956-57), Madhya Pradesh (1957) and in Central Provinces and Berar (1946-49) with promising results.

Improvement of purebred exotic poultry:

Improvement of purebred exotic fowls by modern breeding techniques is being carried out at the Central and State poultry farmers as a regular activity. In order to intensify efforts in this direction a coordinated scheme for the improvement of poultry by intensive family selection has been sanctioned by the Indian Council of Agricultural Research at eight different Centres in the country. These are located in Punjab, Gujarat, Orissa, Bihar, Andhra Pradesh, Kerala, Katpadi and at the I.V.A.R.I, Izatnagar.

Cross breeding:

Cross breeding between White Leghorns and Rhode Island Reds, Rhode Island Reds and Barred Plymouth Rocks and White Leghorns and Australorps had shown beneficial results. In matings involving sex-linked crosses, it has been demonstrated that the sex of chicks could be determined very easily at hatching time.

Development of inbred lines:

Crossing of inbred lines within or between breeds for the production of incross and incross bred chicks respectively for commercial egg production has been practised in foreign countries. In order to meet the needs of the fast expanding industry in respect of laying birds possessing high fecundity, a coordinated project for the evolution of inbred lines for the ultimate object of production of incross and incrossbred chicks in the country is under the active consideration of the Indian Council of Agricultural Research.

Broiler production:

Till recently the demand for poultry meat in the country was met by utilising surplus cockerals produced alongwith the pullets in the normal hatching operations and make and female fowls culled on a poultry farm from time to time.

With the rapid development of the poultry industry, new techniques of production are being progressively adopted to meet the increasing demand for poultry meat.

Rearing of surplus cockerels for meat production is no more thought to be an economic proposition on a commercial egg producing poultry farm. Breeds of chickens have been evolved for the production of meat brids of quality. Good quality chickens of these breeds grow fast and yield tender meat at about 9 to 10 weeks of age. They weigh about 1.5 kg. at this age. They have soft, pliable, smooth textured and flexible breast bone. They are called "Broilers".

A coordinated project for the evolution of suitable strains of White Cornish, White Rock and New Hampshire fowls for the production of commercial hybrid broiler chicks in the country is under the active consideration of the Indian Council of Agricultural Research.

Commercial hybrid chicks:

In recent years three large poultry farms have been established in the country with foreign collaboration, on each at Gurgaon (Haryana), Telegaon (Maharashtra) and Karnal (Haryana). These farms are engaged in selling hybrid chicks for commercial egg and meat production. These hybrid chicks are produced by using foundation strains imported from foreign countries.

Feeding:

Intensive methods of keeping poultry in confinement at all times has changed the concept of poultry feeding. The success of these intensive methods is largely dependent upon the supply of properly balanced and nutritious feed to the birds. In recent years lot of difficulties have cropped up in the way of availability of ingredients poultry mashes.

Cereals, which constitute about 20 to 50% of a poultry ration, are in short supply in the country. Poultry has to compete with human beings to get the same. In order to minimize difficulties in this respect lot of work has been undertaken at the various research institutes in the country, to explore the possibility of replacing the cereal portion of a poultry ration by agricultural and industrial byproducts such as rice polish, topiaca floor, mango seed kernal, tuber, roots damaged grains, mohwa flower residee etc. It is encouraging to note that as a result of such work it is becoming possible to include such substitute feeds in poultry ration in increasing quantities and spare cereals for human consumption.

Non-availability of protein supplements at reasonable cost is another problem being faced by the poultry farmers. Work is being carried out at the C.F.T.R.I., Mysore, I.V.A.R.I., Izatnagar Agricultural Universities and other research stations to ease the situation by exploring the possibility of utilising items like silk worm pupae, corn gluten meal, mustard oil cake, safflower cake, coconut cake, sessame oil cake, cotton seed cake, guar meal, meat meal, meat scraps, blood meal, liver residue meal, Pencilline and Terramycin mycelia residues etc. in addition to the conventional proteien supplements viz. fish meal and groundnut cake. Formulae of balanced rations for different types of chickens are as follows:

Ration for growing egg type chickens

	Growing chickens 1 - 6 weeks	Growing chickens 6 - 24 weeks
Yellow maize or any other cereal or mixture of cereals	25.0 kg	28.0 kg
Rice polish	26.0 "	26.0 "
Barley or oats	7.0 "	7.0 "

Wheat bran	77.0 kg	7.0 kg
Decoraticated groundnut cake	18.0 "	16.0 "
Corn gluten meal	55.0 "	5.0 "
Steamed fish meal	6.0 "	5.0 "
Steamed meat meal	3.0 "	3.0 "
Steamed bone meal	1.0 "	1.0 "
Calcium powder	1.5 "	1.5 "
Common salt	0.5 "	0.5 "

Supplement for 100 kg of mash

Vitamin A	2.2 gms
" B2	0.5 "
" D3	0.3 "
Manganese sulphate	22.00 "
Greens - ad lib. after one week of age	

Ration for layers

Yellow maize or any other cereal or mixture of cereals	30.0 "
Rice polish	20.0 "
Barley or oats	10.0 "
Wheat bran	10.0 "
Decorticated groundnut cake	15.0 "
Corn gluten meal	4.5 "
Steamed fish meal	4.0 "
Steamed meat meal	3.0 "
Steamed bone meal	1.0 "
Calcium powder	2.0 "
Common salt	0.5 "

Supplement for 100 kg of mash

Vitamin A	4.4 "
" B2	0.5 "
" D3	0.6 "
Manganese sulphate	22.0 "
Green - ad lib.	

Ration for broilers

	First 2 weeks	After 2 weeks
Yellow maize or any other cereal or mixture of cereals	20.0 kg	20.0 "

Rice polish	25.0 "	28.0 "
Barley or oats	5.0 "	7.0 "
Wheat bran	5.0 "	7.0 "
Decorticated groundnut cake	25.0 "	20.0 "
Corn gluten meal	5.0 "	5.0 "
Steamed fish meal	7.0 "	7.0 "
Steamed meat meal	5.0 "	3.0 "
steamed bone meal	1.0 "	1.0 "
Calcium powder	1.5 "	1.5 "
Common salt	0.5 "	0.5 "

Supplement for 100 kg of mash

Vitamin A	2.2 gms
" B2	0.5 "
" D3	0.3 "
Manganese sulphate	22.00 "
Greens - ad-lib after week of age	

A number of pharmaceutical concerns are marketing poultry feed supplements for the use of the poultry producer. These supplements have helped a great deal in improving the quality of poultry rations.

Disease control:

While fowls are fast reproducing creatures they also fall an easy prey to diseases. The increase in production of the birds brought about by scientific breeding, and management etc. further causes a strain on the body of chicken and tends to make them more susceptible to diseases.

In the race for high production, the importance of inherent vigour and vitality is too often overlooked. Though it might appear that the ability to give high production is an evidence of good vitality and vigour, yet this may not be always the case. For example, a hen that has been bred to lay heavily, will continue to lay as long as it is physically possible for her to do. During this process she may even have to draw upon her body resources if her requirements are not adequately met with from outside source. Such a situation will result in the hen going 'out of balance' in the struggle for existence and becoming susceptible to diseases.

Large scale traffic of chickens, which is an essential feature of a well developed poultry business, facilitates the spread of infections from one flock to another. Chicken may carry disease infections from the source or pick up the same during the journey and then infect the flocks at their destination. Such factors result in increased losses due to diseases unless proper control measures are taken in time. Though accurate estimates of the losses due to diseases are not easily available yet it is an acknowledged fact that diseases and parasites take a heavy annual toll of poultry.

In order to minimise losses to the industry on account of diseases, extensive work is being carried out at various research stations in the country and control measures for a number of poultry diseases are known.

Antigens for carrying out agglutination tests and vaccines for carrying out prophylactic measures against poultry diseases are manufactured at the Indian Veterinary Research Institute, Izatnagar (U.P.) and many State Veterinary Laboratories.

In order to get the birds tested by the use of antigen or vaccinated for protection against a disease a request may be made to the local Veterinary Officer, Poultry Extension Officer, the State Poultry Development Officer or the State Director of Animal Husbandry.

Feed additives and therapeutic agents needed for control of diseases and parasites are manufactured by a number of pharmaceutical firms and are available at most places in the country. In case of difficulty, a reference should be made to the authorities mentioned above.

Requests for availing laboratory facilities for diagnostic work may be made to the Director, Indian Veterinary Research Institute, Izatnagar,(U.P.) or the Officer Incharge of the State Veterinary Diagnostic Laboratory preferably through the local Veterinary or the Poultry Extension Officer.

Marketing:

Though factors like rapid industralisation, increase in population in the urban areas and increasing awareness regarding the high nutritive value of poultry products are going a long way to increase femand for these products particularly eggs yet many poultry farmers face difficulties in the timely disposal of the

produce at remunerative prices. These difficulties result not only in financial losses to the industry but also cause avoidable wastage of valuable human food material. The high temperatures prevailing in most parts of the country for a major portion of the year, accelerate deterioration in the edible quality of these products and enhance the above losses. Remedies for the problems of marketing of poultry products consist in the provision of cold storage facilities during their storage and transport, suitable packing materials, contrainers and vehicles and organisation of cooperative societies or other similar institution for coordinating the business in a locality or area. Such organisations can also undertake the compounding of poultry feed for the participants and thus make matters easy for them.

Such organisations are comming up in increasing numbers in the country. In Punjab, a Poultry Corporation has been set up by the State Government for looking after the problems of the poultry industry.

Link between Poultry Research and Extension:

The Directorate of Extension in the Ministry of Agriculture at Delhi have brought out a number of publications in popular languages with a view to make latest knowledge available to the poultry keepers and provide the necessary link between Poultry Research and Extension.

The Directorate also organises seminars in Poultry Science where a common platform is provided to the research workers, field workers, and producers for discussing their mutual problems. Such seminars are becoming increasingly popular with the industry.

Instructions in poultry husbandry have been included in the curriculum of the training of village level workers. These workers come in close contact with the farmers and are in a position to carry the knowledge effectively to the farthest corner.

Poultry shows:

The Indian Council of Agricultural Research, New Delhi organises an All India Poultry show and a times regional poultry shows. The State Governments and in some cases the State Poultry associations (e.g. the Bombay State poultry association) hold poultry show or shows in

in their respective areas. In these shows fowls of various breeds are exhibited and judged on the basis of handling qualities and breed standards.

Training facilities:

A nine month diploma course for the award of National Diploma in Poultry Husbandry is conducted annually at the Indian Veterinary Research Institute, Izatnagar. Graduates in Veterinary Science and Agriculture are eligible to apply for admission.

Some Universities have started post-graduate courses for the awarding M.S. and Ph.D.degree in Poultry Science.

Short term training courses in Poultry Husbandry are arranged at Government Poultry Farms in the country details of which can be had from the Poultry Development Officer of the concerned State.

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ROLE OF ANIMAL HUSBANDRY IN AGRICULTUREAL PRODUCTION AND THE STEPS SUGGESTED FOR ITS DEVELOPMENT

Harbans Singh

PLACE OF LIVESTOCK IN INDIAN AGRICULTURE:

Unlike other countries, livestock possesses a unique position in Indian agriculture, where not a single farming operation can be performed without the help of bullocks. In other countries, cows are maintained for production of milk, while in India besides production of milk, cattle directly contribution to the agricultural production of the country.

Next to land, cattle are the peasant's most precious possession. They are useful to him in many ways. He uses his cattle for ploughing, harrowing, threshing, for lifting water and for transporting the produce to the market. Cattle replenish fields by supplying manure and contribute hides and skins after death. In recent past, so far as road transport is concerned, the bullocks are being largely replaced by mechanised transport. However, for the purpose of cultivation, the use of tractors and other mechanised transport is not expected to increase in any appreciable manner so as to affect the bullock requirements. It would be clear from the fact that while in 1956 the number of tractors was 20,980, it went up only to 34,297 in 1961. Under such conditions, mechanisation, therefore, cannot be taken as an important factor in reducing the demand for bullocks to any appreciable extent in the foreseeable future.

II. PACKAGE APPROACH

The recent thinking in the livestock development programmes in our country is on package lines, which means simultaneous and equal attention to all aspects of development. Key village and more recently intensive cattle development schemes have been taken up based on this approach. The schemes blend into their programmes a balanced and simultaneous attention to all the factors which have a bearing on the productivity of cattle. They provide for an equal attention being paid to the cow and its owner.

There are five essential components of these schemes, popularily called "Panch Sheel" of cattle development:

a) Proper Feeding
b) Controlled Breeding
c) Prevention of Diseases
d) Marketing Facilities
e) Education and Village Contact.

III. IMPORTANT EXTENSION ITEMS:

There are a large number of extension items which can be profitably taken up in the field of animal husbandry. I would, however, like to mention some of the most important items. The extension items should be simple, practicable, short term, early yielding results and such which can be conveniently taken up under village conditions by a farmer.

1) Mixed Farming:

The idea of adoption of mixed farming pattern of cropping in the villages need popularisation. Our ancestors fully realised the fact that land and the cow were inseparable. They signified this by calling both of them as "MATA", or benefactor. But due to certain factors, the cow separated from the land and as a result both the land and the cow suffered. Land got depleted and the cow deteriorated in its production. Therefore, cow must be rehabilitated back to the land and this can best be achieved by adopting mixed farming pattern in which the cow would provide a balanced link between the cultivator and his land. The manure available from cattle will help in maintaining the fertility of the soil. It will enable the full and most economical utilisation of the by products of the crops and their conversion to valuable animal products. Thus, the material produced in mixed farming units will be low cost as compared to that produced in specialised units. Mixed farming would diversify production and provide regular income and occupation to the cultivator throughout the year and also in raising his standard of living. It is, therefore, obvious that under Indian conditions, revising of the existing system of cropping by mixed farming will be beneficial both for the betterment of livestock as well as crop husbandry.

2) Development of Feed and Fodder Resources

It has been estimated that of the total cropped area under food and non-food crops in the country only about 4 per cent is put under fodder crops. This, as compared to other countries and in view of the large livestock population in the country, is very low and inadequate. The cultivator is generally more attracted towards the cultivation of food and cash crops due to higher immediate returns from them as compared to the raising of fodder crops.

An Adhoc Committee of Experts on feeds and fodder development (1962) had felt that lack of adequate return from fodder crops due to the limited facilities for the marketing of milk at remunerative rates was mainly responsible for the farmer's limited interest in such crops. The Committee accordingly suggested

that fodder development should be taken on an intensive basis initially in selected areas where farmers generally took greater interest in their cattle and market for milk was readily available.

3) Introduction of Improved Fodders:

Wherever conditions permit, introduction of improved fodders suitable for the area, should be encouraged by arranging actual demonstrations in the fields of the farmers. For example, in areas where irrigation facilities are available, berseem has proved to be a great success. Berseem is not only an excellent fodder for cattle and possesses a high manurial value for the soil but has other definite advantages from agriculture point of view as it tends to prevent the loss of humus, helps in the opening of the soil and is considered useful in reclaiming alkaline land. It is a heavy yielding succulent leguminous crop and especially suited for feeding to the milch animals. Mixed sowing of cowpeas with jowar crop produces a more balanced and nutritious fodder which is relished by cattle.

Giant napier grass has proved useful as a high yielding fodder. This has been obtained as a cross between cultivated bajra and napier grass. This grass yields in a year about 3,000 maunds of green fodder per acre against an average yield of 300 to 400 maunds of fodder of other common kharif fodders. Giant napier is more nutritious and palatable and gives luxurient growth during summer months April to May when there is usually nothing else green available for feeding animals.

To encourge increase fodder cultivation, assistance should be provided to the cultivators for the supply of seeds and planting materials of improved varieties of fodders and necessary bactorial cultures from Government and other farms. The farmers should be encouraged to include fodder in their normal crop rotations.

4) Popularisation of Economically Balanced Ration:

In areas particularly in the paddy growing tracts, where cattle are generally poor in health and production, the deficiency of proteins, vitamins and minerals in the feed, must be overcome by addition in the ration of small quantity of oilcakes, green fodder and mineral supplement. In the rice tracts which form a vast area in the country, cattle are fed mainly on paddy straw. Experiments have

indicated the usefulness of supplementation of paddy straw by small amount of leguminous fodder such as berseem and cowpeas which are specially rich in calcium trace minerals and proteins.

In certain parts of Andhra Pradesh, sunhemp is stacked together with paddy straw in alternative layers, for feeding them together to cattle. This practice has shown good results, as it constitutes more palatable, utilisable and balanced feed than paddy straw alone.

5) Feeding of Minerals:

Popularisation of feeding of common salt and mineral mixture to cattle as a regular practice also needs attention. It helps in preventing in animals loss of appetite, improving haircoat, milk yield and general condition. These and such other practices can be utilised in areas, wherever feasible.

6) Popularisation of Feeding Cottonseed Cake instead of Cotton-seed.

It has been observed that the total digestible nutrients supplied by cottonseed are not higher in proportion to the higher amount of fat in them. Thus, it has been indicated that conttonseed cake is more economical for feeding to cattle as compared to cotton-seeds. Generally, depending on the season and the market, there is a difference of about 5 to 7 rupees per maund in the rate of cottonseed and cottonseed cake. Feeding of cottonseed cake in place of whole cottonseed may therefore be popularised as far as possible, as an extension item. In certain regions, arrangements may be necessary to make cottonseed cake available in the villages to the cattle-owners through cooperative socities and panchayats.

7) Prevention of Wastage of Fodder:

If, on one hand, it is necessary to increase production of fodder and cattle feeds, it is equally important, on the other, that all steps should be taken to encourage full utilisation of the available quantities and prevent wastage.

It is well known that by chaffing the fodder, wastage can be prevented to a large extent. Although chaffing is popular in the northern States, it is not as

widely practised in other parts of the country. The chaffing of Kadbi leads to a saving of nearly half the quantity which means that nearly double the number of cattle can be fed on the same quantity of kadbi when chaffed. Chaffed fodder is relished/more/by animals. It enables the animals to eat and digest the feed more completely. Chaffed fodder of different crops can be mixed together or with straw more thoroughly. Chaffed fodder can be more conveniently handled and fed in the manger or a basket.

8) Conservation of Fodder

Under the present system of feeding, during certain periods of the year, there is surplus fodder and grass available while in other periods, it is almost scarce. Silage making is, therefore, one way of preserving the surplus fodder and also ensuring that the cattle get succulent fodder throughout the year.

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FARMER'S TRAINING IS CENTRAL TO FARM PRODUCTION*

J.C.Mathur, I.C.S.

In the past, talk of farmers' training programmes used to generally invite sceptical comments. This scepticism is now giving place to a vague and general appreciation of the need for providing information to the farmer on matters with which he is concerned. This is happening because of the growing change in the farmer's attitude. He has become aware that the use of new technology in farming brings direct and perceptible benefits to him. These benefits are not marginal in the case of the use of new seeds. They are so substantial, almost phenomenal, that conversion and conviction usually follow from the first demonstration that a farmer sees. His curiosity is sustained by self-interest.

Farmers' training, therefore, is no longer a matter of the periphery. It is central to agricultural production. It has to be part and parcel of any programme of production. However, most decision-makers still have only a vague and general idea about the usefulness of the training of farmers or of its place in a programme of agricultural production.

Mostly it is imagined that training and information imply the production of charts, films, radio programmes and booklets. Both the decision-makers and producers of the programmes are satisfied once these are produced and the material leaves the point of production. What happens thereafter is anybody's business. Little thought is given to the integral connection between a specific programme of farming and the information material that is prepared.

As for training, much of it has remained confined to the extension workers. It is assumed that once they are trained in the essentials of a programme, they would automatically pass on the contents of the training to the farmers. This hope is not much different from Lord Macaulay's hope that the middle class brought under the influence of western education would transmit the fruits of modern knowledge automatically to the masses. Like the English man's hope, the hope pinned on the Village Level Workers is also likely to be belied.

MASS LITERACY

Another set of people concerned with farmers' training are the educationists, specially those in the field of adult

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*Reproduced from Yojana, June 25, 1967, pp. 15-18.

education. In their view, the issue is relatively straight. The farmer can receive and make use of informative material, provided he is made literate. Therefore they emphasise that no time should be lost in organising a programme of mass literacy, thus giving the farmers a much needed tool for using the new technology. This is good so far as it goes. But the obvious difficulty is that the process of imparting literacy to a practising adult farmer(as distinct from an adolescent who has been a drop-out from the school) calls for strain without motivation. It is a deviation from his professional routine without being an entertaining diversion. Therefore the mass literacy programme's link with farmers' training will not be immediate unless it is built into their professional experience. It should be an essential and concurrent element in the adoption of new technology on farming. It should mean developing the capacity of farmers to write out the application forms for fertilisers, seeds and credit, rather than the ability to read a primer.

"Follow-up" is another basic issue involved in farmers' training. In an adult educator's language, "follow-up" means the provision of libraries and journals and reading material. To the agricultural administrator and specialist, "follow-up" generally has had not much significance.

It is vaguely accepted that the material which is published by the various agricultural information departments would be made available to the farmer by the extension workers, even after the initial training has been given. The farmer's education is life-long, because the technology of farming is changing from time to time. It was not so until recently because the distilled wisdom of the ages had provided a sound bedrock for farm operations. That has now been shaken because of the need and pressure for reducing dependence upon the vagaries of the season. The traditional wisdom has to be supplemented by a continuing supply of new information. The extension worker by himself cannot undertake this. There must be some groups at the receiving end.

Is there any continuing insitution for the farmer? The institutions provided at the village level are the panchayats, the co-operatives and recently, in some States, the youth clubs. The panchayats are only administrative bodies; the co-operatives may not specifically be for farmers and may be dominated by various kinds of people. And the youth clubs are by no means regular and continuing.

NO FARMERS' BODIES

In a country with farmers forming an overwhelming majority of its population, it is an anomaly that there are no farmers' bodios. Even such organisations as the Krishak Samaj are there only at the national or the State levels.

Hardly any of them could claim extensive or deep roots among the farmers. A farmers' body has to be a small institution of, say, 20 to 50 farmers. It has to be local, with a specialised interest in the farmers' problems and needs. It is such a group which could ensure a continuing point of communication to the farmers for supplying them information material and for the follow-up of their training.

The groups have another value also. One does not learn by listening or reading alone. One learns by thrashing out problems, discussing them, disputing assumptions and exchanging ideas. Farmers' groups or forums at the village level could thus be a continuing school for the adult.

TRAINING, AN INPUT

The farmers' training and education should now be organised at least in those areas where specific and intensive programmes of agricultural production are being taken up. Farmers' training will become meaningful if it is treated as an essential input (alongwith fertilisers, pesticides and irrigation) of programmes like those of the High-Yielding Varieties, Multiple Cropping, Intensive Cash Crops, and, in the case of animal husbandry, intensive cattle development and poultry development programmes. The training programme should be given the same priority and attention by the organisers of agricultural production as by the trainers and educators.

Fortunately the experience, though somewhat fragmentary, in different parts of the country under the various extension programmes and by institutions and demonstration centres, has shown the validity of such a proposal.

The present High Yielding Varieties Programme (H.Y.V.P.), for example, was preceded by cultivation of these varieties on a limited scale. In a few cases, it was found that if farmers were given instructions about the use of various inputs when they were supplied to them, they were more attentive, assimilated information relatively quickly and responded clearly. This was tried among farmers around Ludhiana in 1965 and was later taken up in some other parts of the country as a programme of one-to-two-day demonstration-cum-training camps. Such camps have since gained popularity in several H.Y.V.P. areas.

Experience showed that at these camps. sometimes, farmers raised questions which could not be adequately answered by the average extension workers. V.L.Ws and extension workers played a useful role in organising the camps, but their role as instructors was limited by their inadequate knowledge.

PERIPATETIC SPECIALISTS

The Agricultural University at Anand conducted an interesting experiment by sending out a peripatic team of some of the specialist members of its staff to the demonstration camps. It was found that these specialists of a level higher than the extension officers could lend to the training programme a more authentic environment. They could answer the queries of farmers and stimulate their curiosity. Early experiments in courses for farmers, lasting from a week to a fortnight in the V.L.Ws' training centres, have shown that young farmers could be attracted towards a training which gives them greater confidence in using machinery, sprayers and fertilisers. These short courses were held in 1965 at 62 Farmers' Training Wings of Gram Sevak Training Centres. It was felt that if they were related to specific production programmes yielding direct benefits, they would appeal to a larger number of young farmers.

Some experiments have gone a step further. Regular Young Farmers' Institutes with courses extending to five to six months or even one year are being attempted by some instituions and State Governments. Their success has varied according to the practical nature of the training and the time that the participants could spare from their seasonal operations.

RADIO RURAL FORUMS

The success of these attempts, specially of the one-to-two-day training camps and of the specialists' direct dialogues with farmers, has prompted a number of State Agriculture Departments to introduce such training facilities in H.Y.V.P. areas since last year. Independently of this, the information media, specially the All India Radio through their Radio Rural Forums, have approached the farmer. The Radio Rural Forum was first tried in 1956 around Poona, which confirmed the importance of the discussion groups as an instrument of education for the rural adults. The number of Radio Rural Forums has gone up since 1956 in practically every State. These Forums, however, had concerned themselves with a diversity of rural problems rather than focussing on farm operations and the specific interests of farmers. All India Radio has, therefore, recently started 10 Farm Broadcast Units in selected centres.

Some educational institutions have also experimented with farmers' education, specially of rural youth. In Mysore, eight Vidyapeeths organised on the model of Danish Fork High Schools have been giving six-monthly courses in both general education, and poultry, dairy farming and cottage industries. Some other non-Government organisations have also established institutions of this kind.

A recent assessment done by the National Council of Educational Research and Training has shown that though the attitude of the rural youth covered by these institutions indicates their desire and willingness to adopt new practices in agriculture, they have not by themselves been effective, as decision-making vests with the heads of their families, that is, senior farmers whose involvement in such training programmes is more important for immediate results. Incidentally, the assessment also showed that, generally, in the package districts the production by educated farmers was higher than the average yield.

It was found by the National Council that the rural youth is also interested in studying specific subjects like insect control, soil testing, use of fertilisers, repair and maintenance of machinery, irrigation methods, farm lay-out and the use of electricity. The interest is greater when pecuniary gain is in sight.

POLICTY INDICATIONS

All these experiments by the Agriculture Department, by information media, and by educational institutions, however valuable, have been rather isolated from each other. Their real value is in certain policy indications that they give for future programmes. These might be identified as below:

1. Farmers' Training Programmes should be so-co-ordinated as to converge upon the principal immediate objective, namely quick and improved agricultural production. All agencies should organise their programmes according to production requirements and cropping. The co-ordination should be effected by those directly involved in production at the field level.

2. The training should result in the acquisition of skills for the adoption of new practices and the use of inputs. At some point there should be a connexion between the supply of inputs and the imparting of training. It means also that demonstration in the use of these skills should be an essential element of training.

3. There should be two-way communication between the participating farmers and the experts. This means that farmers should be able to address their enquiries to experts of a level higher than the average extension worker and get replies in writing and through the radio.

4. There should be continuing instititions, in the form of small, local and informal groups of farmers. These groups should be affiliated to institutes where specialised and longer training would be conducted. These could be the baseline of operations and the points of convergence of the activities of various agencies and of co-ordination among them.

INTEGRATED TRAINING

In the light of the experience gained from the unco-ordinated programmes of various agencies, it should be possible to work out an integrated programme of farmers' training in the districts that are to be covered by the High Yielding Varieties Programme. Already a beginning has been made with five districts in the country and it is proposed to extend the programme to 100 districts.

This is not the place to present a blue-print or to furnish details of this proposal. In fact, a training programme has to avoid the rigidity of a blue-print; it should be flexible and adjusted according to the local needs of the particular areas and of the agricultural practices in the area. Broadly, however, the programme visualises (a) demonstration-cum-training camps, (b) farmers' discussion - cum - demonstration groups, (c) Farmers' Institutes or Kisan Vidyapeeths, (d) functional literacy sub-groups, (e) intensive broadcasting units at selected radio stations, and (f) provision of sufficient number of radio sets to the farmers' discussion groups. The proposal thus visualises co-ordinated working by the Departments of Agriculture of the States and the Centre(Extension Directorates,) Departments of Education and All India Radio.

Demonstration-cum-training camps will be organised for one adult member per farm family in the H.Y.V.P. area, and as far as possible, the inputs cards (authority for drawing high dosage of fertilisers) should be issued at these camps. These camps should be organised by V.L.Ws and Extension Officers, but should be addressed by peripatetic teams of specailists who should move according to a time-table.

Farmers' discussion-cum-demonstration groups should be organised in each village of the H.Y.V.P. area, with about 20 farmers in each group. The groups should meet twice a week and serve as a continuing medium for imparting the latest information and discussing radio programmes and also function as a permanent extension vehicle. Each group would have a convener from among its literate members who should receive a small honorarium to defray postage and reporting expenses. Ultimately, these discussion groups should emerge

as an informal voluntary group combining the atmosphere of a club with the strength of an interest-group.

Farmers' Institutes or Kisan Vidyapeeths may be one in each district. Not only should they provide a number of courses (7 to 15 days and three months courses for young farmers), they should also become the constant point of reference for any difficulties and enlightenment and should seek to establish a two-way communication through correspondence and personal contacts with the farmers' discussion groups. Each farmers' institute should have a demonstration farm and modern equipment, and should be located there. The short courses to be conducted by them may be broken into short periods according to the needs of the cultivators, so that they may not have to be away from their farms far too long at a time. The participants in the courses should be provided food and other facilities and free transport.

Functional literacy sub-groups should be organised by the farmers' discussion-cum-demonstration groups, for their literate members. The syllabus of literacy sub-groups should be so drawn up that during the process of learning itself, the adult learner is able to apply the skills (as he acquires them in stages) to specific farm requirements. Thus he would learn to fill in the input cards and progress cards, keep farm accounts, complete applications for loans and read simple informative material. This will make the process of learning a meaningful experience to the farmer and give him a sense of practical achievement. The object, thus, is to use Mahatma Gandhi's technique of "co-relation" (of basic education) to adult farmers' literacy courses. The reading material will have to be specially prepared for these courses.

The radio programmes should be drawn up according to the progress of the crop season and the training imparted at the demonstration camps. The low-cost transistorised receiving set will be the main vehicle of this activity. In every radio programme (twice a week), there should be some time set apart for ensuring questions sent by the farmers' groups. Recording teams should also be sent out to the villages to record the voices of the farmers who are advancing in H.Y.V.P.

Systematic evaluation at all stages should be an important feature of the project. An attempt should be made to determine the relative effectiveness of the various teaching methods and projects, singly and in combination. The evaluation should be entrusted to a suitable and experienced agency.

The new approach to farmers' training seeks to fill the 'communication gaps' that have been noticed in the extension programmes. This has become possible primarily because the farmer sees in the use of the new seeds and the attendant package practices an unprecedented opportunity for the betterment of his lot. If we have to make full use of the farmer's expenses for charge, merely producing a programme over the radio or giving talks to the farmers or even supplying them the tools and the inputs would not be enough. Every aspect of the extension programme and farmer's education should revolve around the agricultural production programme.

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RESULT DEMONSTRATION

Baldev Singh

The proof of the pudding is in eating. Similarly seeing is believing. This fact I laid stress when I was talking to you about method demonstration and specially at the juncture when I pointed out about the high intake and exposures. A result demonstration is method of teaching, designed to show by example the practical application of an established fact or group of related facts. It is concerned with proving the worth of a new practice.

An extension result demonstration is a demonstration conducted by a farmer, or other person under direct supervision of the extension worker, to prove the advantages of a recommended practice or combination of practices. It is designed to teach others in addition to the person who conducts the demonstrations. It is used to prove the practical application of basic facts to farm and home problems and is no sense experimental.

Objectives

i) To prove the worth of a new practice.

ii) To show that the recommendations are locally applicable and are profitable.

Types of demonstrations

A result demonstration may deal with a single practice such as use of commercial fertilizer or it may include a series of practices such as those involved in the management of a poultry flock, in saving time and energy in the kitchen. Some demonstrations may be completed in short time while other may continue a year or more e.g. poison baits to kill rats, tree planting demonstration.

Differences between result and method demonstration.

	Develop proof	Method demonstration Teaches method
1. Conducted by	Farmer, Home maker.	Extension employee
2. Designed to teach.	Other in addition to person conducting it.	Person present.

3. Where	on Farm, in home.	At a training meeting or on television.
4. Duration	Usually several weeks, months or year.	Length of the meeting only.
5. Purpose	To establish local visible proof of the advantage of one practice over another or of a new practice.	To teach skill or method to show step by step as to how to do.
6. Cost	More costly than method.	Less costly than result.
7. Steps in procedure. Example.	A result demonstration planned to prove the advantages of pruning spraying etc.	A method to show to prun or spray.

<u>The place of result demonstration in relation to other extension methods.</u>

Studies show that the most effective extension work is done when several teaching methods are inter-related. It takes a combination atleast 5 different methods to till the same facts if extension workers are to obtain maximum adoption of a recommended practice.

1. How attention was drawn?
2. How interest was stimulated?
3. How desire for solution of the problem was increased?
4. How he or she became convinced?
5. How testimony of satisfied users helped to build confidence in practice.
6. How ... decided to adopt.

<u>Trend and number of result demonstration.</u>

The trend in recent years has been towards fewer, better planned and more convincing result demonstration.

Advantages and limitation of result demonstrations

Advantages

1. Stimulates more interest.
2. Increases confidence.
3. Helps to discover local leaders.
4. Provides specific local proof.
5. Provides records of outstanding results that can be used to calculate the benifits of extension work to farmers and home makers.
6. Convinces persons who have more confidence in the experience of their neighbours.

Limitations

1. They require much time in planning establishing and supervising.

2. The direct cost/practice is high.

3. Some time difficult to find out well qualified person who will keep the necessary records for some projects and practices.

4. It is difficult to develop specific proof of the advantages of some practices such as using a better diet.

5. Poorly done may creat adverse effect.

Steps in planning and conducting result demonstrations

1. Decide what practices need to be demonstrated.

2. Discuss with the people and find out their interest and existing practice and past experience.

3. Consult with the subject-matter specialist and discuss technical know how and advatages.

4. Select the demonstrator.

   a) local people in whom the community have faith and confidence.

   b) Friendly.

c) Public spirited.

d) Patient

e) Cooperative

f) Progressive

g) Energetic

h) Easy to reach

i) Keeps record

j) Willingness on the part of the demonstrator for the demonstration to be used as teaching aid.

5. Locate sources of material.

6. Discuss and plan with the selected farmers.

7. Announce widely.

8. Location.

   a) The demonstration should be located in a community where there is a problem.

   b) Easy to reach.

   c) A farm selected for a demonstration should be as nearly typical of the community as possible.

9. <u>Conducting the demonstration</u>

   a) Check the plan.

   b) Get all the material ready.

   c) Start the demonstration in the presence of the villagers.

   d) Proceed step by step and emphasize key points and precautions .

   e) Involve the group.

   f) Mark demonstration plots with large signs if it is a field demonstration.

g) Assist the farmer on whose field the demonstration is conducted.

h) Make a calendar of operation.

i) Visit the demonstration site regularly for supervision and guidance.

j) Give publicity.

k) Conduct tours to successful demonstration.

l) Summarise records. Analyse and interpret data in terms of farm practices.

m) Report results of demonstration through all media of communication.

n) Have demonstration report at meetings, etc.

o) Enlist other farmers to adopt the new practice.

p) In cases of failure analyse the causes.

q) Limit the scope of the demonstration to prove the adovated practice.

r) Have a comparision or check plots.

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CHECK LIST OF METHODS USED IN PLANNING, CONDUCTING AND PUBLICIZING RESULT DEMONSTRATION

Please check.

1. How was the Result Demonstration planned

a) Was situation analyzed to ascertain whether local demonstration of this practice or these practices necessary?

1. To provide local proof of the advantages of the practice or practices. ________

2. To show to what extent the local results of using the practice would vary from those at the experiment station. ________

b) Did an extension worker prepare a written plan for the demonstration before it was established. ________

c) Who helped to plan?

1. V.L.W. ________
2. E.O.(Agri.) ________
3. D.A.O. ________
4. Agricultural Sub committee of the Panchayat Samiti. ________
5. Demonstrator. ________

d) Was there adequate research evidence to indicate the possibility of successful results? ________

II. How was the demonstration selected:

a. By V.L.W. ________
b. By Agl. Sub committee. ________
c. By local leaders. ________
d. By neighbours at meeting. ________
e. Demonstrator volunteered. ________
f. Other ways (specify) ________

III. How was the Demonstration started and considered?

a) Was Extension worker present on farm or in home when demonstration was started? ________

b) Was demonstration conducted under typical conditions of neighbouring farm or homes? ________

c) Was sufficient time allotted to demonstrator to obtain the necessary evidence or proof? ________

d) Were there check units or other definite basis for comparision? ________

e) Were pictures taken at suitable times? ________

f) Did V.L.W. help demonstrator obtain material and services for carrying on demonstrations? ________

IV. How was demonstration supervised?

a) Through

1. Farm or home visit. ________
2. Circular or other letters.

b) In your opinion was demonstration visited often enough to maintain the demonstrators' interest.and to see that succeeding steps were performed as planned. ________

V. How was demonstration followed up?

a) Were demonstration results publisized through

1. Meeting ________
2. Tour ________
3. News article ________
4. Feature stories ________
5. Circular letter ________
6. Radio ________
7. Television ________
8. Exhibits ________
9. Movies ________
10. Slides ________
11. Film strips ________
12. Picture ________
13. List other methods (Please specify) ________

b) Did publicity mention name and location of the demonstration? ________

c) Did demonstrator report at meeting? ________

d) In publicizing result was appeal made on basis of

1. Satisfaction to be gained through

i. Reduced cost or increased profits ________
ii. Increased yield or production ________
iii. Saving of time and energy ________
iv. Increased efficiency ________
v. Improved health ________
vi. Other (specify) ________

____

2. Losses or annoyance avoided

a. Low crop yield
b. Low live-stock ________
c. Poor quality - low priced products. ________
d. Other (specify) ________

____

VI. Summary of Results of all such demonstrations of this practice or these practices in the block.

a) How many similar demonstrations of this practice or these practices were conducted in block during year? ________

b) On how many of these demonstrations were record kept and summarized? ________

c) How many of these demonstrations showed that the practice demonstrated had enough advantages over the old ones or those commonly used to justify their adoption? ________

d) Approximately how many people are known to have seen these demonstrations? ________

e) How many people have indicated that they plan to use the practice or practices demonstrated? ________

f) During how many years have similar demonstrations of this practice been donducted in block - Total No. conducted? ________

g) How many similar ...

LESSON PLANS

Each participant was assigned five lesson plans in his own subject-matter field. In this group there is a variety of topics connected with the different Instructors in Horticulture, Home Science, Panchayats, Cooperation, Agricultural Engineering, Agricultural Economics and Animal Husbandry. Fifteen of the Lesson Plans have been selected from this assignment for inclusion in this booklet.

These attempts may be considered as suggestive guide lines to the Instructors who teach these subjects. They can be improved upon according to local and individual requirements.

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LIST OF LESSON PLAN TOPICS

1. Sh. Tayyeb Ali
   - i) Methods of irrigation.
   - ii) Drainage system.
   - iii) Cow dung gas plant and its use.
   - iv) Dry farming.

2. " Ram Aqbal Pathak
   - i) Importance and scope of vegetable cultivation.
   - ii) Cultivation of mango.
   - iii) " " "
   - iv) Cultivation of cauliflower.
   - v) " " potato.

3. " R.N. Yakhmi
   - i) Preparation of seed bed for vegetables.
   - ii) Rejuvination of orchards.
   - iii) Advantages of vegetative propagation in horticulture.
   - iv) Irrigation methods in orchards.
   - v) New strategy in agriculture.

4. " S.N. Pareek
   - i) Selection of site and soil for orchards.
   - ii) Importance of fruit nursery and its layout.
   - iii) Causes of low bearing and its remedy.
   - iv) Nitrogen - source of availability - application to the crop plants and its impact on the plants.
   - v) " " " "

5. " A.S. Saini
   - i) Cooperatives and rural finance in Jammu.
   - ii) Agricultural marketing - some problems and suggestions.
   - iii) Cost/benefit analysis of selected projects in Jammu's agriculture.
   - iv) The incremental capital - output ratio in agriculture in Jammu and other States.
   - v) The adoption of improved practices and their effect on production in Jammu.

6. Sh.S.P.S.Khati

i) Organisation of gram sabha and gram panchayat and their meetings in U.P.
ii) Working of gram panchayat in U.P.
iii) Functions of gram panchayat in U.P.
iv) Vote of no-confidence against pradhan in U.P.
v) Financial resources of gram sabha and gram panchayat in U.P.

7. " K.C.Mittal

i) Cooperative farming, need what is cooperative farming?
ii) Service cooperatives, organisation, etc.
iii) Importance of rural industries in Indian economy.
iv) Village industries - problems.
v) Membership in cooperatives - qualifications for enrolment.

8. " Kamta Prasad

i) Wholesale consumers stores organisation and working.
ii) Linking of credit with marketing.
iii) Working and organisation of forest labour cooperatives.
iv) Differences and characteristics of service, credit, multipurpose and large sized societies.
v) Organisational setup of panchayati raj institutions in Rajasthan.

9. " J.S.Dawra

i) What are the advantages, essentials of a silage and how will you make silage?
ii) Causes, symptoms and treatment of cattle.
iii) Causes, symptoms, treatment of ranikhet disease in poultry.
iv) Minerals and vitamines in animal nutrition.
v) Art of milking in cattle.

10. " M.S.Dwivedi

i) Clean milk production.
ii) Milk microbiology.
iii) Diseases affecting the milk consumer.

iv) Chemical diagnosis of pregnancy.
v) Infectious and contagious diseases.
vi) Balanced diet (cattle).
vii) The pattern of oestrous cycle.

11.Mrs.H.K.Gill
i) Gas plant in rural home.
ii) Janta refrigerator in rural home.
iii) Thiamine and your health.
iv) Vitamin C in your diet.
v) Food for expectant mothers.

12.Miss Chandramani
i) Control on house hold insect pests.
ii) How to make your kitchen an ideal?
iii) Care of house hold articles.
iv) Interior decoration in village home.
v) Some pain relieving medicines.

13. Sh.Lallan Singh
i) Hygienic disposal of night soil in rural area.
ii) Hygienic disposal of water in rural area.
iii) Disinfection and its importance.
iv) Importance of personal hygiene.
v) Functions of primary health centre.

14. " S.C.Misra
i) Pure water for villagers.
ii) Infection and its communication.
iii) How to calculate safe period.
iv) Riboflabin - B_2 .
v) Niacine - function deficiency disease sources of availability.

15. " C.K.Sharma
i) Iron - functions, effect of deficiency and sources.
ii) Vitamine D - functions, effect of deficiency and sources.
iii) Hook worm.

iv) Small pox - symptoms, mode of spread and preventive measures.
v) Importance of green leafy vegetables in the diet.

16. Sh.B.P.Srivastava
i) A good seed bed.
ii) Working of seed-cum-fertilizer drill.
iii) How to popularise use of improved agricultural implements.

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EVALUATION OF LESSON PLAN

Name of Instructor ______________________ Name of observer ______________________

Lesson Plan title ______________________ Date & time ______________________

	Maximum marks	Rating	
1. **Personal qualifications:**			
a) Appearance	3	____	
b) Attitude	4	____	
c) Voice - delivery	3	____	
d) Interest - attention	2	____	
e) Confidence	4	____	
f) Mannerisms & gestures	2	____	
g) Humour	2	____	
h) Tact	3	____	
i) Punctuality	2	____	____
	25		____
2. **Presentation:**			
a) Arrangement of class	2	____	
b) Introduction	5	____	
c) Visual Aids - skill - effectiveness	8	____	
d) Involvement	10	____	
e) Discussion	5	____	
f) Examples) g) Illustrations) h) Ancedotes)	5	____	____
	35		____
3. **Subject-matter knowledge:**			
a) Up-to-date knowledge	8	____	
b) According to level of understanding	5	____	
c) Balanced coverage	6	____	
d) Summarisation, references and assignments	4	____	
e) Application to local situations	4	____	
f) Emphasis on key points	5	____	
g) Economics	2	____	
h) Precautions	2	____	
i) Merits and demerits	2	____	
j) Job related	2	____	____
	40		____

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LESSON PLAN NO.1

1. Class. Gramsawikas.

2. Subject. Home management.

3. No.of periods allotted. One (45 minutes).

4. Topic. How to make our kitchen an ideal one.

5. Objective.
   i) It will save time and energy.
   ii) It will give a clean view.
   iii) Healthy food can be cooked in a healthy atmosphere.
   iv) Increase effeciency of the home maker.
   v) Avoid the wastage of food stuff.

6. Previous background of the lesson taught. As we have discussed last time an ideal home, we will now discuss as to how we can make our kitchen an ideal one.

7. Aids to be used.
   i) Black board and chart.
   ii) Flannel graphs.

8. Presentation of the topic.

<u>Introduction</u>.

We all are interested in the improvement of our health.

No doubt there are other factors which are related to it, but mainly is the food we are getting. And the healthy food depends on the healthy situation of the kitchen where we usually cook it.

Presentation of a new subject matter.

As soon as we utter the word kitchen an attractive and clean view with well arranged containers and utencils will surely come in our mind. Moreover kitchen is a place where we work with a view to safety, time or energy saving and good results. So the kitchen is a very important place where our home-maker spends much of her time and energy.

Defects in present rural kitchens.

In the villages least importance has been given to the kitchen. Even in this scientific age the arrangement of the kitchen is so poor and unscientific that it effects on the health of house-wife and her whole family.

Some kind of awakening is required to our rural house wife. We will discuss some points which can be make our kitchen an ideal one.

I - Proper selection.

There should be some specific area to be called a kitchen. In our villages it is very common to fix a chullha in varandha or in a room and cook food there. It wastes most of the time and energy of house-wife. For a long period she will be busy to save her food from crows, dogs, cats and so many insects. It should be well ventilated, far from the bath rooms, lavotary and dirty places.

II - Smokeless chimni -

Smoky kitchen is really a curse. Smoke is very harmful for eyes. It will spoil and blacken all the articles of kitchen. So smokeless chimni is an essentional thing of our kitchen.

III - Proper arrangements of the utencils.

Proper placing of utencils to put them conveniently is required in the kitchen. It may be shelfs, almara or any other raise plate farm made of wood or clay. It will be easy to have utencils when they are needed to house wife. Proper placing of canopener, spoons, folks handling pots, knife and strainer will save the time. All that is needed for shelves would be mud, bricks, bamboo and wooden planks.

IV - Washing places.

If the kitchen is too small than the washing place should be near outside the kitchen. In a big kitchen washing place inside will be convenient. It should be clean, slopy and without cracks. Proper arrangements to place fine ash which is called 'Rakholi' soap and the other cleaning agents should be there.

V - Storing of ration.

We should keep the tin boxes, match, glass or other containers with tight fitting lids. Food in paper bags, card board boxes or in uncovered earthen pots will attract the insects. Containers should be kept in order on the shelfs. Paste name chits of the articles on the container which will save the time of house wife.

VI - Meat safe.

Food, milk and other eatables will be safe from ants, crows, rats and other so many insects if kept them in meat safe.
In the villages it took only a little labour with less cost. It can be made with locally available materials.

VII - Arrangements of drinking water.

The pots made of clay, matel or buckets which are used for drinking water should be kept on some high level and properly covered.
Our rural house wife can make it with the help of clay, bricks and pebble.
Proper placing of drinking water will keep water clean which is very useful for health and will also help in the cleanliness of kitchen.

VIII - Labour saving devices.

As magan chulla, hay box and cooker are called the energy saving devices, that should be introduced in a ideal kitchen.

IX - Tidyness of the articles.

Moreover cleanliness and orderliness should be observed while arranging kitchen. Even the proper placing for dish towel, pot holders and cleaning and flour dusters will make your kitchen tidy.
For the vegetables we should have baskets made of bamboo or iron in our kitchen. Proper placing for them will keep our vegetables fresh. We can have Janta Frige for it.
Carosin oil, match box and fuel should be placed in safe conditions.

One can easily provide these conveniences with localy available material.

9. Summarising and Recapitulation.

We have discussed how we can make our kitchen an ideal one. Proper selection for the place is needed. It should be well ventilated having smokeless chimni, shelfs for utencils washing place, containers with tight fitting lids on shelves, meatsafe and raise plate farm for drinking water.
Labour saving devices should be introduced in it. It should have very clean and tidy look.

10. Check up.

i) What kind of kitchen is called an ideal kitchen.?

ii) What can be energy saving devices.

11. Reference. i) Every day living

ii) A new text book of home science by Kamla Gupta and Ramlal Gupta.

12. Assignment. Arrange your kitchens in your villages with a view to make them ideal and show me in my practical periods on wednesday.

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LESSON PLAN No. 2

1. Class — Gram Sevikas

2. Subject — Food and Nutrition

3. Topic — Cooking of food

4. No. of periods allotted -One period of 45 minutes.

5. Objective

   1. Every housewife should know the different methods of cooking for different food.

   2. There is no doubt that India has food shortage but the ladies who do not knowthe value of cooking destroys utility of food only to make it palatable and decrease degestibility power of food.

   3. They should know the different cereals, pulses and vegetables are cooked to save their food value and get more utility.

6. Previous background of the lesson taught.
   In the last lecture we discusses topics like Protein, carbohydrates and vitamins and you are fully convinced that every person must take balanced food for keeping good health. Now we are going to take the topic that only square meal cannot maintain good health if it is not cooked correctly.

7. Aids to be used.

   1. Black board and chalk.

   2. Flannel strips.

8. Presentation of the topic.

   Historical background

   Cooking is the speciality of the human civilization. No other animal cooks its food. In the early days of the human civilisation man also did not cook his food. He was eating everything raw. Reference has already been made as to how and when cooking came into vogue.

Civilisation progressed differently and at varying rate of progress in the different parts of the world. Even now there are primitive tribes who do not cook their food.

Habits

Amongst civilised peoples, cooking is not absolutely universal. Some foods we still take raw and love to do so. There are now some people highly civilised and highly cultured who advocate going back to nature and they preach in reason and out of reason that mankind should leave the unnatural habit of cooking food. It is, however, not very easy to leave off a habit which is more than 12,000 years old. Nor is this reaction against cooking based on any scientific reasoning. It is not a fact that cooking destroys, deteriorates or adversely changes the utility of food. Rather cooking enhances the utility of food and increases the palatability and digestibility of food. It must be understood clearly that it is the faulty way of cooking that undoubtedly destroys much of the intrinsic value of the food stuffs. There is no reason why cooking itself should be condemned, because of its occasional abuse. We do not condemn scientific development in spite of their universal use.

Purpose of cooking food

There are certain definite purposes for cooking the food. Cooking improves the sight, smell and taste of food. It makes food easy of mastication and digestion. The food constituents get simplified by cooking. But certain complicated process of cooking and dressing of food deteriorates the value of food. A simple food becomes difficult of digestion. If tastefulness be not made the only criterion of food cooking, if cooking is adopted for improving the intrinsic value of food, we will not suffer from many of our present ailments. Instead of the meaningless efforts to go back 12,000 years, if we rationalise our food and its cooking it would lead us to a better world.

Cooking-loss of vitamins

Cooking of cereals & pulses by the ordinary methods does not harm these food stuffs. The food constituents remain preserved. By cooking, the cellulose covering of the starch grains get broken up and when eaten digestive juices easily digest the starch. The vitamins get lost only by prolonged application of heat, particularly vitamin C. Because

of high initial content of vitamin C amaranthus and other leafy vegetables retain enough vitamin C even when cooked. Vegetables cooked in ordinary way lose a lot of their nutritive value.

By washing

By washing the rice before cooking we lose a lot of mineral, salts, proteins and vitamin B; cooking, however, does not harm these. If paddy is well kept, if husking is clearly done and rice is cleanly preserved there is no necessity of washing rice and the loss of the nutritive elements can be avoided. Any way the rice may be winnowed but should not be washed on any account.

Quick Frying

Quick frying does not harm most of the food stuffs. Addition of cooking soda completely destroyed the vitamin value of the food but if the food is cooked with tamorind or other acid fruits the essential food constituents including the vitamins are well retained.

Too much cooking

Too much cooking of protein foods, particularly animal proteins, is bad. The food gets stiffened and indigestible.

Stream cooking

Steam cooking is the best method of cooking. It does not produce any bad effects. None of the food constituents are lost. There are many indigenous methods of steam cooking. If these indigenous methods of steam cooking are universally adopted and improved, the quality of our diet will greatly improved.

References and examples

In this connection the method of steam cooking of the great Jagannath Temple is worthy of reference and if the devotees of the lord Jagannath take a lesson out of the Lord's method of cooking they would do an immense service to themselves and necessarily please the great Lord. The simple method of steam cooking so popularly adopted in Orissa and Madras to prepare some simple yet delicious cakes is very scientific in

conception and merits encouragement. If the principles of this method are extended to the cooking of other foods, there will be full retention of the nutritive elements of food stuffs and at the same time the deliciousness of the food stuffs will increase. A representative example of this indigenous method can with advantage be mentioned here.

Indigenous method

A quantity of black gram grains is crushed and soaked in water. By an ingenious process of washing, the black covering of the grains are removed completely. The whole thing is ground into a paste. By another very ingenious but simple process the pasty mass is aerated which results in the enormous increase in volume of the original mass. This process of aeration softens the cooked material. A quantity of water is kept in a pot. A piece of fine liner is bound to the rim of the pot. The required quantity of paste is placed on the liner. It is covered over completely by well fitting cover. The whole is placed over a fire. Steam generated from the water remains enclosed and steams and cooks the black gram paste. Various improvements over this process have been introduced. The Enduri of Orissa and the Idli of Madras are the products of this methods.

Recapitulation and summarisation.

1. Cooking of food is changed with the civilisation.

2. Do not condemn scientific development in spite of their universal abuse.

3. Cooking improves the sight, smell and taste of food.

4. Prolonged application of heat loses vitamin C.

5. Avoid too much cooking, washing vegetables before cooking, adding soda, shallow frying etc.

6. Adopt steaming method for cooking.

Testing and check up

1. Explain the scientific method of cooking.

2. How the Vitamin C is protected while cooking food.

3. What is the harm if too much protein cooking.

References

1. Report of the Nutrition Committee for South and East Asia - Sponsored jointly by F.A.O. and W.H.O.

2. Nutrition in health and disease.

3. Elements of food and nutrition by Mary T. Daw.

Assignment

1. Check the village ladies using wrong cooking methods.

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LESSON PLAN NO. 3

Class	..	V.L.W.trainees.
Subject	..	Panchayat.
Topic	..	Formation of Gram Sabha and Gram Panchayats and their meeting in Uttar Pradesh.
Period	..	One of 45 minutes.
Object	..	To acquaint the trainees with the organisation of Gram Sabha and Gram Panchayat and how to conduct meetings of Gram Sabha and Gram Panchayat.
Previous background	..	The trainees mostly come from rural areas and as such are expected to have some knowledge of Panchayats.
Aids to be used	..	Chalk and black board; flash cards, charts.

PRESENTATION

Introduction

The following simple questions will be asked to illicit the knowledge of the trainees about the subject:-

(i) Which village you belong to?
(ii) What is the organisation that works for the welfare of the village?

Presentation

The legislature of Uttar Pradesh passed Uttar Pradesh Panchayat Raj Act in 1947. It is known as Uttar Pradesh Panchayat Raj Act 1947. According to the Act Gram Sabhas were formed in every village of Uttar Pradesh. The minimum population required for the formation of Gram Sabha is 250. Those villages which had less population were merged with other villages to form a Gram Sabha.

The qualifications for the membership of a Gram Sabha are as follows:

a) He must be a citizen of India.
b) He must be resident of the village within the Gram Sabha.
c) He must have att ained the age of 21 years.
d) He must have not been declared insane by a competent court of law.

The members of the Gram Sabha elect members of the Panchayat from among themselves. This is the Executive body of the Gram Sabha. The membership of the Panchayat depends upon the population of the Gram Sabha. It is as follows:

Population From	To	No. of members of Gram Panchayat
250	1000	15
1001	2000	20
2001	3000	25
More than	3000	30

Any person who (1) is not a member of the Gram Sabha, (2) is paid servant of Panchayat Government, (3) has been removed from service on charge of corruption, (4) is in arrears of Panchayat tax, (5) is a leper, (6) is an insolvent, (7) is convicted for moral terpitude or under Essential Supplies Act or U.P. control of Supplies Act or U.P. Removal of Social disabilities Act and (8) Blind and dumb cannot contest for the membership of Panchayat.

The members of the Gram Sabha also elect a Pradhan by secret ballot. The Pradhan must have the qualifications for membership of the Gram Sabha and Gram Panchayat and he should not be less than 30 years of age.

Testing & check up

The following questions will be asked:

i) What are qualifications for the membership of Gram Sabha?

ii) How the number of members is determined for Panchayat?

iii) What is the essential qualification of a Pradhan?

Presentation

There are two meetings of Gram Sabha in a year. One is known as Kharif meeting and the other is known as Rabi meeting. The budget is passed in the Kharif meeting and the expenditure is reviewed in Rabi meeting.

The agenda of the Gram Sabha is circulated 15 days earlier. All members should be informed by posting the Agenda at public places and by beating of drum.

The agenda of the meeting of Gram Panchayat is circulated 5 days before the date of meeting. The signatures of the members should be taken as a proof. The meeting of Panchayat is held in every month.

The quorum for the meeting of the Gram Sabha is 1/5th (one fifth) of the total membership. The quorum for the meeting of Gram Panchayat is 1/3rd (one third) of the total membership. But when a meeting is adjourned for the lack of quorum there is no question of quorum for the next meeting.

The Pradhan presides over the meeting of the Gram Sabha. The Panchayat Secretary takes the minutes. After the meeting the Pradhan and all the members present sign on the register.

<u>Check up and test</u>

1. How many meetings of Gram Sabha are essential in a year?
2. How many meetings of Gram Panchayat are essential?
3. What is the rule regarding the agenda of Gram Sabha?
4. What is the rule regarding the agenda of Gram Panchayat?
5. What is an adjourned meeting?

5 <u>Summarisation & recapitulation</u>

According to Uttar Pradesh Panchayat Raj Act, 1947 Gram Sabhas were formed in every village. The minimum population to form a Gram Sabha is 250. All adults who are 21 years of age, who are citizens of India, who are resident of the village and who have not been declared insane by a competent court of law are members of the Gram Sabha. The Gram Sabha elects members of the Panchayat and Pradhan of the Gram Sabha. The Gram Sabha holds two meetings in a year and the Panchayat has its meeting in every month. The agenda for the Gram Sabha is circulated 15 days before the date of meeting and for the Panchayat 5 days before the date of meeting. The quorum for the meeting of the Gram Sabha is 1/5th of the total membership and for the Panchayat 1/3rd of the total membership. No quorum is required for the adjourned meeting. (The summarization will be done with the help of flash cards).

Testing

1. What is the qualification for the membership of the Gram Sabha?

2. What are the disqualifications for the membership of the Panchayat?

3. What are the salient points to be remembered for the meeting of a Gram Sabha?

4. What are the salient points to be remembered for the meeting of a Gram Panchayat.

Reference

Utter Pradesh Panchayat Raj Act & rules.

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LESSON PLAN NO. 4

1. Class	Gram Sewaks
2. Subject	Horticulture
3. Topic	Fruit Nursery, layout and selection of plants.
4. No. of periods allotted.	One
5. Objectives	To impart knowledge about the fruit nurseries, their layout and how to select the plants from the nurseries.
6. Previous back ground.	The trainees already know the layout of orchards and importance of the fruit plant.
7. Aids to be used.	1. Black board. 2. Chart 3. Flannel strips.

8. Presentation

a) What is a Nursery?

Nursery in the place where small plants are raised either from seed or from vegetative propagation and taken care till they become worth planting.

Nursery is an essential feature of an orchard. Nurseries can be either of -

i) Commercial scale or
ii) Small scale

just to meet the requirement of the orchardist.

In commercial scale nursery may type of seedling and vegetatively propagated plants are raised and disposed off to the growers and this becomes the main business of the nursery man.

In India, there are about 30,000 fruit plant nurseries producing 300 million different typesof fruit plants annually. But this number is very small looking to our increasin demand.

b) Presentation ...... Layout

A model fruit plant nursery has got following component parts:

1) Seed bed section

i) In this section beds are proposed and seeds are sown and seedlings are raised.

ii) This should be very fertilized section and a good quantity of organic manure should be added.

2. <u>Nursery bed section</u>:- Seedlings after attaining 6"- 8" height are transplanted in this section where either they are disposed off or if necessary, they are propagated.

The seedlings should not be detained here for longer period. (more than 1 to 1½ years)

3. Mother plant section:- It is the section where pedigree mother plants grow. These mother plants are used for propagation.

4. Pot yard section:- Potting is done.

5. Manure section:- Leaf manure and compost manure is prepared in this section.

6. Workingshed:- Labour work use.

7. Office and store:- for keeping records and equipments and implements etc.

Selection of plants:-

The longivity and productivity of an orchard depends on the quality of the fruit plants planted.

And at the same time the importance and reliability of a nursery also lies in propagating and supplying good plants.

The following salient points should always be kept in view while selecting the plants:-

i) Reliable source:- The plants should always be purchased from a well repute nursery registered by the State Agri. Department.

ii) Pedigree plants:

a) Only pedigree fruit plants should be purchased
b) The performance of their parents should have been a record.

c) The plants should be true to the type.

iii) Age: Old plants having more than two years should not be purchased.

iv) Size: Thickness of the stem and length should also be kept in view and ascertain whether it corelates with the age or not.

v) Straight: The plant should not be crooked.
vi) Strong union:- The plant should have been rightly propagated so that the union becomes strong.

vii) Ultimately the plant should be free from all the diseases and pests and it should be quite a healthy plant.

Application:

i) Help the farmers in raising fruit plant nurseries in a right way.

ii) Select good and quality plants for the farmers.

Recapitulation and Summarization:-

Now you know that nursery plays an important role in the development of Horticulture so more attention should be given towards this side.

All the important points like True-to-type. Age, Size, Health, Disease free, stock-compatibility etc. should be considered while selecting a plant.

Testing and check up:-

i) What are the component parts of a nursery?

ii) The presence of mother plant in a nursery ensures ...... ?

iii) Name the points which should be considered while selecting a fruit plant.

Assignment:-

i) Visit near by nurseries.

ii) Participate in Van Mahatsava

Reference:-

i) Fruit culture in India

ii) Fruit nursery practices in India.

iii) Vaigyanic Udhyan Shastra.

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LESSON PLAN No.5

1. Class.	VLWs.
2. Topic.	Art of milking (hand milking) in Buffaloes.
3. Time.	One period of 45 minutes.
4. Objectives.	1. To save the milch animals from the infection.
	2. To obtain the healthy milk for the consumers.
	3. To check the infection from one animal to another.
5. Aids to be used.	1. Black board.
	2. Posters.
6. Previous knowledge.	While discussing clean milk production a reference was made regarding full hand milking.

7. Introduction:-

Milking can be called an art. A good milker removes milk efficiently, gently, cleanly and completely in the shortest possible time. He must know how and when to milk and the milk should be removed under clean and sanitary conditions.

Before milk, it should be ensured that the milker and the cow are healthy and clean, surroundings are neat and tidy and the milking pail has properly been sterilised. She should be handled carefully, tenderly affectionately and at regular times. Rough handling, & irregular milking hours will make her hold up the milk. A milker should not approach the buffaloe abruptly and suddenly. Unusal delay in milking time often causes milk to dripple in many heavy yielders. Such are called leaky buffaloes.

Presentation: - There are two methods of milking : -

1. Machine milking.
2. Hand milking.

In both the cases the milk is removed by exerting pressure on the teats. Machine milking is good for a big herd of heavy milkers and is not being used by the

villagers as they possess one or two milch animals only.

Hand milking is practised all over the country as it is convenient and economical.

This method is followed in 3 ways.

1. Stripping.
2. Nevelling.
3. Fistingorfull hand milking.

The milk must be squeezed and not pushed out of the teat. The first few strips from each teat should be discarded because these might be contaminated with dirt. Some people moisten the hands in milking. This practice is to be condemned not only because it is unsanitary and results in contamination of the milk but also because the moistened teats become sore when they are exposed to cold.

Stripping:- This is done by holding the base of the teats with the thumb and the index finger, pressing lightly and sliding them down to the end of the teat so as to make the milk to flow down. This is a continous process, repeatedly sliding the fingers and thumb up and down the teats. Both hands may be used, each holding a different teat a working alternately. This causes milk to flow in two streams. This method is more suitable if the teats are small.

Nevelling: - In this the teats are grasped at the base with the index finger and the knuckle of the thumb, then pressing it with the middle finger and the lateral finger. The pressure is released and applied alternatively. This is an easy method but may deform the teats due to the constant pressure of the knuckle and should not be practical.

Full hand milking: -

The teats are held with the whole hand and pressed between the palm and the fingers. The process of alternate compression and relaxation is repeated in quick succession to squeeze milk from the two teats in a continous stream.

Advantages of full hand milking over stripping method:

1. Removes milk quickly and easily.

2. Animal feels as if she is being suckled by a calf.

3. Less tire-sone of the milker.

4. Pressure is even, and well distributed all over the teat, and less fiction is caused.

5. Danger of injury to teat is lessened.

Whatever the method used, the milking should be done as quickly as possible. The let down of milk is dependent on the influence of the harmone oxyto ein released by the stimulation of the udder by the pitutary gland. The full effect of the harmone lasts for about seven minutes. Therefore, make the milking operation to coincide with the release of the harmone.

Recapitulation and summary:-

Milk at regular hours, do milking quickly, gently, and completely. Practice full hand milking.

a. Assignment: - In your village practicals practice full hand milking.

References: - 1. A text book of Animal husbandry by Srivastava and Khera.

2. A hand book of Animal Husbandry for Extension Officers by Harbans Singh

3. Dairy Science - its principles and practices by W.E.Peterson.

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LESSON PLAN No.6

1. Class. V.L.W.

2. Topic. New concept of sanitary well.

3. No. of periods allotted. One period of 45 minutes.

4. Objectives.

   1. To bring improvement in village well.
   2. To insure safe drinking water for villagers.
   3. To minimise water born diseases.
   4. To improve health.

5. Previous background:-

Previously the trainees were told about three most important things for survival of life viz; AIR; WATER and FOOD. Air had already been discussed. under heading water including its importance and sources.

6. Aids to be used: -

   1. Black board.
   2. Chalk and
   3. Charts.

7. Presentation of topic:

Most of our villagers use well as a source of water. Wells used in Indian villages are of the following types.

   1. Dug well.
   2. Step well.
   3. Artisan well.
   4. Tube well.

<u>Presentation of new topic:</u>

Dug well is the most common type of well used in Northern India. They may be pakka or kacha. They may be sanitary or insanitary. Though, through percolation of sub-soil water, its physical and bacterial impurities are filtered. The water of dug well remains unhealthy due to following causes.

Causes of impurity:-

1. Being kachcha -

Rain water from nearby drains or pitches may enter in the well through crackes in the wall or from the surface.

2. Being open:-

Dust, leaves and other dirty articles may fall in the well.

3. Plantation:-

In old wells small plants shoots up on the wall and birds make nests on them. The discharge of excreta and eggshells etc. make water impure.

4. Small animals:-

Animals like cats, dogs may fall in the well.

5. Individual ropes and buckets.

It is one of the main cause of bacterial impurity. Alongwith the buckets and ropes placed and dirty places, infection may reach to the water.

Danger caused by impurity.-

. Following diseases are caused by p ollued water. They are known as water born diseases. This includes Cholera, Diarrhoea, Dysentry Typhoid and infentile paralysis.

What was done ?

To get rid of the danger caused by polluted water following recommendations were made for improvement of a well.

1. It should be pakka.
2. Well plastered.
3. With plateform and parapet wall
4. Pullys.
5. Roof
6. Common rope and buckets.

Does it keep the water pure? No, still it has got following drawbacks.

A- Well in open
B- Individual buckets can be used.

C- Small animals can get in.
D- Polluted dust, leaves may fall in.

What to do?

Make changes according to the new concept of sanitary well.

1. Well should be pakka and well plastered.
2. Half of its mouth should be permanently be covered by R.C.C. Slate.
3. Half should be covered by removeable cover made up of wood or iron sheets.
4. Hand pump should be provided for lifting of water.
5. Pully may be provided towards temporary cover.
6. It should be disinfected time to time.

Application:

1. What is the new concept of sanitary well?
2. Does it fulfill all the requirements?
3. What are the water-born diseases?

Summary:

In the Northern part of India dug wells are commonly used whose water is polluted and may be injurious to health. The old design of sanitary well is not fulfilling the requirements, hence a new design has been recommended.

Test and check-up:

Question as in application.

References:-

1. A text book on Health and Hygiene by Mr. Ghose.
2. Pure water supply to villagers published by PRAI Lucknow.
3. Prasar Pustika Jan Swasthya, U.P.

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LESSON PLAN No. 7

1. Class — Village Level Workers and Gram Sevikas.

2. Subject — Home management

3. Topic — Refrigerator for the rural home.

4. No. of periods allotted - one period of 45 minutes.

5. Objectives

   1. Prevent the vegetable and fruits from withering and drying.

   2. Adequate and proper storage of food in order to prevent it from getting spoiled.

   3. To encourage the villagers to accept the cheapest device in summer.

6. Previous back-ground of the lesson taught.

   In the previous class labour saving devices like Hay box and janta cooker was dealt. We discussed the cheap home made devices save our time, energy and money. All of you were given some assignments of preparing Hay box and Janta Cooker in your cottages and to introduce the same in the villages. I am happy that most of you have performed. Now we are going to deal the topic "Refrigerator for the rural home".

7. Aids to be used.

   1. Black board and chalk.

   2. Models of the Refrigerator.

8. Presentation of the topic.

   When summer arrives, fruits and vegetables start withering and drying. All of us face the problem of adequate and proper storage of food in order to prevent it from getting spoiled. The Janta refrigerator is the answer to our problem.

Introduction

This refrigerator will keep our fruits, vegetables, milk and even cooked food fresh and good for several days. It will occupy but a small space in our kitchen. What is most important, is that it can be made by us, right in our own kitchen and at practically with a very low cost.

This is a simple, earthenware model, capable of keeping vegetables, Bhaji, fruits, butter, milk, eggs, beetle-leaves, etc. in fresh condition for a pretty long period.

Invention

Originally this 'frig' was invented by Dr. Raju, an eminent engineer of Hydrabad. On the basis of that, people experimented with different types of earthen vessels and different varieties of articles for preservation. The device for the continuity of evoporation by capillary action of the cloth cover was also introduced, with the result vegetables etc. remained surprisingly fresh for nearly a week. These results encouraged to put this device before the villagers.

Any person whether living in a village or in a town can afford to keep this 'Frig' in his house. It works on a very simple scientific principle.

Construction

There is an earthen tub 17" in diameter with 8" high walls the type pan-dealers use. This should be filled with water to a depth of about 1½". A small clay stand or patli about 6" in diameter, with a few holes on its upper surface may be placed in the centre of the tub. This 'patli' is meant as a base, for the wire cage, holding articles for preservation, as subsequently explained.

Another earthen vessel of the shape of a cylinder 14" in height and about the same in diameter (outside) should be placed in the tub. This cylinder should have a removable, dome-shaped lid, with a central knob for lifting it. Around the knob, there should be 8 to 10 holes, ½" in diameter.

Articles for preservation are to be kept in a specially prepared wire cage, about 12" or less in diameter, with two shelves upper and lower supported on a central rod. It is quite essential that the knitting of the wire cage should not be close as to create air partitions within the cylinder. All one has to do is to lift the top lid and place the wire cage inside.

The earthen cylinder should leave about an inch of space around when placed in the tub. The cylinder should be provided with a Khadi petty-coat, having 8 to 10 vertically stitched lamp wicks, about 3/4" in width. These should be re-stitched that their ends at the bottom remain loose and dangling. The top lid should also have a separate cloth cover. For both these covers, khadi cloth will be found more suitable though finer cloth for the top lid will be preferable.

Placing spot:-

This entire device should be mounted on a tripod stand in a cool, breezy spot of the house. Ordinary the spot where 'paniara' is located would suit the best. Periodical sprinkling of water on the cloth cover will give better results, but care should be taken not to over do it.

Working method

The 'Frig' works on a simple, principle, The bottom part of the khadi cloth cover and its dangling wick ends draw moisture from the water in the tub, by capillary action.

All the while, moisture drawn upwards goes on evaporating. In this continuous process of evaporation, it is being fed by the latent heat within the cylinder, thus reducing its internal temperature. It is for this reason that the articles inside remain fresh and cool for a long time.

Experiment:

Experiments were done in the month of February and March, delicate leafy vegetables like green coriander kept fresh for about 5 to 6 days, vegetables like haji, tomotoes, brinjals etc. remained fresh almost a week. Lovers of beetle leaves will be the happy that their pans could remain fresh for more than week in this 'frig'. An experiment with a milk vessel showed

that it could remain in good condition for 26 hours 'Neera' drink was found to remain fresh and unfermented even after sun-set, although it was kept in the 'frig' early morning.

To stimulate the process of evaporation, porosity of the cylinder required to be increased. This was done by adding suitable fibrous materials in clay, which burnt while baking the clay cylinder thus making it more porous.

Precautions

For obtaining the better results, it would be desirable to let articles like boiled milk etc. cool down to normal temperature, before placing in the 'frig'. In one case it is noticed with surprise that milk at boiling temperature was immediately placed inside the 'frig', for preservation. This would definitely retard the efficiency for cooling because the temperature of water in the lower tub would be raised.

The lower earthen tub will not retain water for the first 2-3 days. This could be remained by keeping it dipped in water for about 8 to 10 hours.

Another important precaution is to see that there is always about 1½ of water or say about ½" lower than the top of the central 'path' in the lower tub: without this, the entire device would be quite ineffective.

Popularisation:

Saurashtra Khadi and Village Industries Board and its president Shiri Ratubhai Adani, Ex-development Minister Saurashtra took very keen interest in these experiments, right from the beginning. In fact, some of the most valuable suggestions for improving. The design of the 'Frig' were received from Shri Ratubhai. The Khadi Board at his initiative has decided to popularise the 'Janta Frig' and has accordingly undertaken to have these models manufactured on an extensive scale. This would definitely go a long way in promoting the use of 'Frig' by people.

Summarising and recapitulation:

1. Earthen tub 17" diameter with 8" high walls.

2. Earthen cylinder 14" diameter (outside)

3. Dome-shaped lid with 8 to 10 holes. ½" diameter and knob for lifting in the centre.

4. Round earthen 'patli' 6" dia. and 2" in height with a few holes on its upper surface.

5. Wire stand with two shelves for keeping articles for preservation.

Assignments:

1. I want to see one Refrigerator in each cottage of this Training Centre Hostel, at the time of my visit on monday it should be in working order.

2. Introduce at least 3 Janta Refrigerator, within the five selected families of each Gram Sevika.

Reference:

1. Janta 'Frig' by Akborbhai Nagori.

2. A Refrigerator for the rural home farm information unit, Directorate of Extension, Ministry of Food and Agriculture.

3. Grahini Directorate of Extension.

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Lesson Plan No.8

1. Class	Gramsawikas
2. Subject	Home Management
3. Topic	Indoor control on house hold insects and pests.
4. No. of periods	One (45 minutes)
5. Objectives	1. To save the food stuff, clothing, furniture and other house hold articles. 2. To insure healthy life by protecting from insects and pests.

6. Previous background of lesson taught.

Trainees have knowledge of the importance of healthy and well managed home.

7. Teaching aids:

1. Black board and chalk
2. Flannel graph and strips.

8. Presentation of the topic .

a) Introduction

The Insect pests are very harmful creatures. To get rid of insects and to keep free from them, we should adopt some controlling measures and maintain cleanliness. The most common house pests in our rural houses are:/

1. Flies
2. Mosquitoes
3. Cockroaches
4. White-ants
5, Clothmoth
6. Bedbugs

I. House fly and its controlling measures

It is the most dangerous of all pests found inside the house. Flies are so numerous, so ever present that their presence is taken more or less for granted.

A small female fly may lay hundreds of eggs over a period of same week. This makes the killing of any single fly a matter of great importance.

The life work of a fly consists crawling over waste and collecting germs on its legs which are deposited on food to be eaten by human-beings. It is the cause of so many diseases.

Indoor control

The usual precautions of general cleanliness are:- Keep all food covered, preferably in meatsafe. Spray the room each day, Don't put wastage in uncovered dustbins.

Keep the doors and windows of the home screaned with wire guaze. If this is not possible, screen the kitchen and bathroom.

A fly swat, which is a racquet can be used to hit and kill flies.

II. Mosquitoes

Only the female mosquitoes spreads Malaria fever by sucking the blood of a diseased person and injected it into the next person.

Indoor control

1. Mosquito net should be provided especially to the patient and children.

2. Spray all corner of the room and bed and furniture. An in-expensive spray can be made by mixing hot soap water and kerosene.

3. The burning of incense and neem leaves helps in keeping mosquitoes away.

4. Rub citrorella oil or ears, arms and legs etc.

III. Cockroaches

This small creature comes only to eat in the kitchen. The female cockroach deposit its eggs in dark to dirty place.

A thorough house cleaning at any time during the year is likely to destroy the eggs and nesting of cockroaches.

Besides the food, it will eat old papers, books, feather, vegetable and fruit leavings. It does not necessary eat a great deal but leaves excreta over food.

Controlling measures

1. Sprinkle liberal quantitiesof an insecticide such as B.H.C. in the drains, across the kitchen and house door ways.

2. Pour kerosine mixed boiling water down the open drain.

3. Sulphur or borax powder should be dusted over where they are expected.

4. Fill the holes wherever possible with cement

IV. White-ants

Whiteants have stranger appotite than other insects They are satisfied with nothing less than the house itself.

Wooden floor, door frames, window and foundation of timber can be eaten by them if left undisturbed long enough.

There can be easily recognized by little galleries on the ground, on trees or wooden furniture.

Controlling measures

1. It should be destroyed with boiling water and kerosine immediately.
2. The holes should be filled with D.D.T. powder.
3. Wooden portion should be treated with some preservative.

V. Clothmoth

It causes demage to clothes, not only woolen clothes but rugs, blankets, hangings feathers and furs are equally damaged by it.

Eggs of the female moth are laid on the fabric. The more comfortable and undistrubed they are the more they will eat.

Controlling measures

1. All seasonal clothes to be put away must be freed of the eggs before storing with .

2. After washing and drycleaning the articles liberally and then wrap in newspaper.

3. Inspect the garments occasionally during the hot season.

4. Don't neglect the things by leaving undisturbed for months together.

5. Moth ball are also useful to keep the clothes safe from clothmoths.

VI. Bedbugs

It sucks the blood which is its food and will disappear soon. It lives in cracks and holes of furniture & the house wash with the boiling soap water.

1. Beds and furniture where they are suspected . Mix some kerosine oil.

2. Cushions and mattress should be brushed well of carefully dusted.

3. The mattress and bedding should be regularly put out in the sunlight.

Summarisation and Recapitulation

Methods to control the insect pest in short are:

1. Dust insecticide powder or use sprayer oftenly.

2. Observe usual methods of general cleanliness.

3. Have doors and windows of home screaned with wire gauze.

4. Fill all cracks and holes in the ceiling walls and floors.

5. Never leave food or water uncovered.

6. Regularly air and sun all bedding, mattress rugs and heavy clothing.

7. Lime wash the kitchen and house as often possible.

Check up

1. What are the controlling measures of flies?

2. How will you recognise the white ants?

3. How you will save your store food stuff from cockroaches and clothing from clothmoth?

4. What is the cheapest spray to control mosquitoes?

5. The easiest way to control the bed bugs?

Reference

Textbook of Home Science by R.P. Devadas

Assignment

1. Make and spray the cheapest sprayer in your hostel villas on Sunday.

2. Keep your woolen clothes after taking all the precuation to save them from clothmoth.

3. Wash your furniture and beds with hot soap water containing Kerosine.

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LESSON PLAN No. 9.

1. Class. — Gramsevaks.

2. Subject. — Public health.

3. Topic. — Small pox - Symptoms, mode of spread and measures for its prevention and control.

4. Time. — One period of 45 minutes.

5. Objectives.
   i) To tell the gramsevaks the symptoms of small pox.
   ii) To enable them to understand its mode of spread.
   iii) To tell them the preventive measures.

6. Aids to be used. Black board.
   Chalk.
   Chart.
   Strips and models.

7. Previous knowledge.

   The gramsevaks have already been told about other air borne diseases.

8. Introduction.

   Small pox is a contagious specific fever caused by a filtrable virus. It is one of the major epedemic diseases of India. The average seasonal maximum occurs in March and minimum in October. The disease is most fatal in children between the ages of two and four.

   The incubation period of this disease is usually 12 days, but it may be as short as five days or as long as three weeks.

9. Presentation.

Symptoms of small pox. (Flannel strips).

1. Severe pain in back and sometimes vomiting.
2. Temperature 103° to $104^{o}F$.
3. Eruption of skin on the third day of illness and fall in temperature.
4. Spots come out in progressive order from above downwards - face, hands and arms, trunk, legs, feet.
5. Vesicle stage - Vesicles are formed on the fifth or sixth day.
6. Pustular stage - On 8th or nineth day the milky water couberts into pus.
7. Then the pustules began to dry and within twenty one days the seabs are fallen.

Mode of spread.

i) Air is the medium through which the contagion is transmitted.

ii) Direct contact.

iii) Throat or nasal secretions.

iv) Dried scabs.

v) Through fomites.

Preventive measures. (Flannel strips).

1. Notification - To health authorities.
2. Isolation - The patient and the suspect should be separated.

3. The sick room - All unnecessary articles furniture etc. should be taken out of the sick room. 10% solution of formalin may be kept in the room in a vessel.

4. Care of corpses: All persons dead of small pox should be wrapped in sheets soaked in a 40% soln. of formation and should be cremated or burnt as early as possible.

5. Vaccination. It is the introduction into the human system of vaccinia, which is cow-pox, an allied disease to prevent small pox. Mass vaccination should be done to prevent the disease. It gives immunity for 3-5 years.

6. Disinfection. The infected house and its contents should undergo a most thorough disinfection with formaldehyde.
Clothing, bedding etc. should be kept exposed to the sun-light. Rooms, vehicles etc. should be washed with soap and hot water and then disinfected with 10% soln. of formalin or funigated with formaldehyde or sulphur vapour.

7. Personal care.

   a) Vaccination.
   b) Change of clothes.
   c) Hands to be washed in some strong antiseptic solution.

10. Summarisation:

1. What are the symptoms of small pox?

2. How this disease spreads?

3. How will you educate people in order to prevent the spread of this disease.

11. Assignment: 1) To prepare charts to show the symptoms of the disease.

2) To prepare a set of flash cards to demonstrate the prevention of the spread of the disease.

12. Reference: A treatise on hygiene and public health - by B.N.Ghosh.

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LESSON PLAN NO.10

Class	..	V.L.W.
Subject	..	Public health.
Topic	..	Infection and its communication.
No. of periods	..	One period of 45 minutes.
Objectives	..	To give knowledge (a) about infection, (b) how infectious diseases spread and (c) what are channels of infection.
Previous background	..	Every individual is acquainted with the term INFECTION, but only few of them knows what it actually means. Infectious diseases are problem of the day hence every extension worker must know some important facts about it.
Aids to be used:	..	Black board, chalk, flannel strips and suspence chart.
Presentation of the topic	..	Though we have reduced our death rate by fifty percent still it is very high in comparision with the developed countries. Amongst causes of the death in India, infectious diseaes are one of the main cause. Only this causes forty percent deaths. Hence we must know what is infection, how it spreads and how it enters into the body.

Presentation of the subject.

(A). What do you mean by infection?

" By infection is understood introduction into the body of the patient some particular micro-organism which are capable of multiplying within it at the expence of the host".

Thus the INFECTIOUS DISEASE is a disease of a man resulting from an infection.

(B) For communication of infectious diseases the following four conditions are necessary:

ORGANISM

HOST (Healthy man) MEDIA

SOURCES OF INFECTION

(C) Sources of infection

There are the following five sources of infection through which infecting organanism travels from place to place.

I. Insects - flies, mosquitoes, fleace etc.
II. Fomites - articles used by the patient or other infected articles.
III. Food - Includes are the things which can be taken through mouth.
IV. Fecal matter - It includes stool, urine, spitoon, crust etc.
V. Carrior - Person having micro-organism in the system but not showing any symptons of the disease.

(D) Chances of infection

How an organism gets into the body? What type of organism it is ? Unless and untill you know the channel of infection of a particular disease you can not check it. The following are the three main channels of infection and diseases carried by :

1. Nose: Organisms of small-pox, children pox, measels, mumps. diptheria, flue, T.B. enter through nose.

2. Mouth: Diseases like cholra, dysentry, diarrhoes, typhoid, hook worm, infantile paralysis etc. enter through mouth.

3. Skin: Diseases which are injected by some insect enter through skin.

There are as Malaria, Filaria, Plague, Tetnies, Riry worm, Scabbies, Sijphilies, Gonorrhoea etc.

Summarising & recaptulation

" Infection is introduction into the body of the patient some pathogenic micro-organism which are capable of multiplying with in it at the expence of the host. The disease results from infection is INFECTIOUS DISEASE.

For communication of infection four conditions, viz. organism, media, source and host - are necessary. Sources of infection are insects, families, food, feeal matter, and carriers. Through skin, mouth and nose most of the infectious diseases get into the body.

Questions to the trainees

1. What do you mean by infection?

2. What are the sources of communication?

3. What are the channels of infection?

Reference

1. Hygiene & Public health P.I.429-437.
by B.N.Ghos.

Assignment

Next talk will be on "PREVENTION OF INFECTIOUS DISEASES" so you all should go through the topic in the book referred.

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LESSON PLAN No: 11.

1. Class.	V.L.Ws.
2. Topic.	Disposal of night soil in rural areas by Planning Research and Action Institute type latrine.
3. No. of periods.	One (45 minutes).
4. Aids to be used.	Black board. Flannel strips and Charts.
5. Objectives.	To acquaint the trainees with the construction and use of PRAI Type Latrin so that they may help in Hygienic disposal of night soils in rural areas to reduce the filth born diseases.
6. Previous background.	The trainees know about the hygienic disposal of waste water in rural areas.

7. Introduction:-

The common practice of disposal of excreta in villages is of going to some open field and leaving it uncovered. Generally women, children and old person go very close/to inhabitation and discharge night soil there. In this way the uncovered night soil goes under decomposition and causes so many problems. Nuisance, foul smell, ugly look, fly breeding, water polution and spread of infectious diseases like cholera, dysentry, typhoid, worms etc. are the results of this bad practice. In some total this creates unhealthy environment resulting ill health. To raise the standard of health therefore it is necessary to pay attention to solve this problem.

8. Presentation:-

To make hygienic disposal of night soil in rural area we have to consider it with certain limitations that are due to rural areas.

We cannot recommend sewage system for rural areas as it is not possible there. Therefore, we have to solve the problem in such a way that it may suit to rural conditions. First of all we should consider the essential qualities of a particular system which is suitable to villages.

Qualities of a good sanitary latrine for rural areas:

1. It should be cheap and locally available.
2. Easy in installation.
3. Permanent construction.
4. Does not require sweeper service.
5. No foul gas comes out.
6. No chance of infection.
7. No chance of fly breeding.
8. It should be hand flused.
9. Requires less space for construction.
10. Does not polute drinking water.

All the above qualities are found in PRAI type latrine and in no other.

PRAI Type Latrine: - I - Parts:-

1. Pan
2. Trap
3. Curved pipe.
4. Dome pit cover.

Cost of the set - about 10/- to 15/-.

II- Material required for construction:-

1. Cement, sand, Gitti and messon and labour.
2. Latrine set complete.

III- Layout:

1. First decide for the place of pan and pit and mark it.

2. There should be provision for second pit at a distance of 3' from frist pit.

3. The diameter of the pit is 2'-9" in case of Kaccha pit and 3'-9" in case of brick net work.

4. Location of the pipe should be as such that it may fall 3" in side the pit projecting its end towards the centre of the pit.

5. Pan should be atleast 10" away from the back wall of the room.

IV - Construction of the Pit.

Dig a pit at the marked place having 2'-9" distance in case it was to remain as Kaccha pit can work well only where soil is good and where there is no danger of its collapse due to water inside. Where ever kaccha pit can not work, dig a pit of 3'-9" diameter and make brick net work to make it stable. In this way also actually the pit remains only 2'-9" in diameter after brick lining.

V. Installation of the set:-

1. Pan should be placed by digging some earth in such a way that its uper surface remains horizontal at 6" above the ground level. This should be fixed on cement concrete bed so that it may be strong.

2. Connect the trap with pan in such a way that both the ends of the trap are in the same horizantal line. Make the joint by cement and rub inner side with some dry cement to make it smooth.

3. Make drain for placing the curved pipe with a slope of 1" per 1' pipe an length. Connect the pipe with trap and make the joint with earth mud so that at the time when first pit is full it may be turned easily in second pit. The other end of the pipe should be 3" inside the pit and should project towards the centre of the pit.

4. Cover the pit with dome pit cover and make a dome shaped earth covering above the pit sot so that no rain water may collect near it.

5. Make a platform round the pan of 3'x4' at least in size and 6" high from ground level. The slope in the platform should be towards the pan from all the sides. The platform should be hard, smooth and impervious.

6. Fix foot rest on the both sides of the pan.

7. If necessary construct pacca wall for its purdah and plaster it upto a height of 2' atleast.

VI- Cost of installation:

It varies from place to place according to the local situation and cost of the material.

1. In case of only set installation and kaccha pit it should come about Rs.25/-.

2. In case of installation and pucca pit about Rs.45/-.

3. In case of installation, pucca pit and Purdahawall about Rs.70/-.

Execution of the programme in rural areas:-

The following important point should always be remembered before the installation of the

1. Selection of the family:-

First priority should be given to those who are already using service type of latrine, second to those who are of some high status and are in better economic conditions, third priority to those who are observing Purdah system. If this is practically applied that programme will become popular very soon.

2. Selection of site:-

The site as for as possible should be inside the house, if it is not possible then attached to the house. In no case it should be constructed far away from the house.

Precautions in use:-

1. Make it a private latrine and not a community latrine.

2. Always flush the latrine before and after use.

3. Do not drop paper, waste cloth or any other thing in the pan.

4. Do not use any antiseptic etc.

5. Protect the pit by covering its dome shaped with earth.

6. When first pit is full, turn the pipe in second pit and cover the first pit with earth.

After six months take out manure from the pit.

Summarization:

The PRAI type latrine has all the essential qualities a good latrine. .. Precautions should be taken in the selection of family and site. While instalation pan should remain horizantal and trap must form a water seal of 1/2 ' to 1' thick. Take all the precautions while using it so that it may last for a longer time.

Role of VLW :

The success of the programme will depend upon the active participation of the VLWs.

Assignment:

Make the diagram of installation of PRAI type latrine narrating its construction and necessary precuations.

Reference:

1. PRAI Lucknow publication on rural latrine.

2. Prasar Pustika.

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LESSON PLAN No: 12

1. Class.	V.L.W.
2. Topic.	Analysing the possibilities of different methodsof disposal of waste water in rural areas with special reference to Rural Development type soakage pit.
3. No. of periods.	One (45 minutes)
4. Objectives.	1. To impart knowledge to the trainees. 2. To improve rural environmental sanitation. 3. To check water polution. 4. To reduce prevalence of water borne diseases.
5. Previous background.	General information about Health, Hygiene and environmental Sanitation has already been given.
6. Aids to be used.	Black board and chalk.
7. Introduction.	In rural areas there is no arrangement for the disposal of waste water, which results in creating nuisance , decomposition of organic matter, mosquito-breeding, foul smell, water polution, ugly look etc. This effects rural health badly. Therefore due consideration has to be given to remove its ill effects and to promote good health.

Presentation :

Methods possible for the disposal of water : -

1. Drainage system.
2. Kitchen Gardening.
3. Underground disposal(construction of soakage pits).

Merits and demerits of each system in rural areas:-

1. Drainage: -

1. Drainage system:-

This system requires construction of pucca drainage which collects the waste water of the whole house and discharge it at some suitable place. It is a good system provided conditions necessary for it are fulfilled.

In rural areas the following difficulties arise:-

1. Houses are not systematically located to construct drains.
2. Proper gradient or slope is not possible.
3. Regular tap water supply is not existing in villages.
4. It requires much technical skill which is not possible in rural areas.
5. Money needed for construction is huge - villagers cannot contribute so much.
6. Problem of discharge of water remains unsolved as most of the villages are not situated on the bank of some river nalah.

Therefore, this system is not applicable in Rural areas.

2. Kitchen Gardening:-

It is a very good method as it irrigates the kitchen garden and also removes the ill effect of waste water. This system should be encouraged where it may be possible to do so.

But there are certain difficulties in this too.

1. Every house is not so situated as to have its kitchen garden.
2. Water from community wells cannot be utilized by this system of disposal.

Still wherever possible this system should be introduced.

3. Underground disposal:

Underground disposal means disposing of the water locally by constructing some type of soakage pits.

Types of soakage pits popular in U.P.

1. Rural development type soakage pit(RD type).
2. Plant type. " "
3. Itawah type "
4. Bore hole type " "
5. Military type " "
6. Soaking French type. " "

Advantages of soakage pits:-

1. It disposes of water locally.
2. It prevents water pollution
3. It prevents mosquito breeding.
4. It prevents bad odour.
5. It prevents " nuisance.
6. It improves environmental sanitation.

General principles of construction of soakage pits:-

1. It should be about 20' away from the source of drinking water.
2. It should be constructed at a place where no water logging takes place in rainy season.
3. To increase the efficiency of its working chamber should be constructed.
4. Drains coming out from the source of waste water should not be directly connected with the soakage pit.
5. A separate drain for rainy water should be constructed.
6. Soakage pit should not be covered from above.
7. After rainy season it should be opened and refilled again.

R.D. Type Soakage Pit: -

Today we will discuss R.D. Type Soakage pit.

Construction:-

1. Select the place taking all the necessary precautions for the construction of the pit.

2. Dig a pit 4'x4' in length and breadth and 6' deep and take out all the earth.

3. Construct a drain from the house towards soakage pit but do not connect directly but at 60° angle.

4. Refill the pit as below:-

   a. Fill the pit from below upto 2' with sand.

   b. Above this fill it with 'A' class., bricks upto one foot more.

   c. Again fill one foot with three-fourth brick pieces.

   d. Above this upto one foot with half brick pieces.

   e. And lastly remaining one foot upto ground level with brick blast with bigger one below and smaller one on upper surface.

   f. Protect the pit from rainy water by collecting earth round about it.

   g. Do not cover the pit with earth.

   h. Construct a grit chamber if possible on the drain coming to the soakage pit and use some filter to remove floating material from water coming from the drain.

Application:-

This type of soakage pit is very useful for rural areas where space for its construction is possible nearby the houses. It works successfully though is a bit costly in construction.

Summarisation: -

At present there is no hygienic system

of disposal of waste water in rural areas with the result the whole of the environment has become unhealthy. To dispose of this there are three main method out of which due to so many difficulties drainage system is not possible, kitchen gardening is possible only where land is available nearby houses. The third method of disposal by under ground soaking is very practical if necessary precautions have already been taken. Construction of R.D.Type is very simple , but care should be taken in its refilling. The layering should as for as possible be done as indicated above. It should in no case be covered with earth.

Reference:- Prasar Pustika.

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LESSON PLAN NO. 13

Class .. V.L.W.

Topic .. Clean production of milk.

No. of periods .. One period of 45 minutes.

Objective .. To give an elementary idea of quality milk of good flavour, from healthy cows, free from Dirt & Dust containing only a small number of bacteria, none of which is harmful. Much of milk as it comes from the cow, is of high quality but it does not always remain so because of the conditions under which it is produced & handled. Hence much attention is to be given to these conditions of contamination of market milk is to be kept at a minimum.

Previous background .. In lesson plan 1 much has been discussed about the micro-biology of Milk.

Aids .. Chalk & black board, flannel graphs.

Presentation These days in villages, cities and also towns we talk & hear about improving the present ingredients of diet and also talk of taking balanced diet. Milk is the only source of Animal protein which our vegeterian population can take. So if we improve the quality of milk, and the detailed information given to consumer, producer & public welfare worker our purpose is solved.

Clean milk (Clean production of milk) The milk produced under strict sanitary conditions and proper care permits of only bacterial count of 10,000 per c.c. but no disease producing bacteria.

Sources of bacteria in milk

(i) The udder interior and exterior.
(ii) Cow's body.
(iii) The litter or bedding.
(iv) The atmosphere.
(v) The feed.
(vi) The milker.

(vi) The utensils & milk pails, cans, strainers & separators, bottles and other utensils & equipment in the processing plant.

<u>Testing of cows</u>

Periodical testing of cows by the Vety. Doctor is a necessity and all the suspected cases are to be culled atonce. The testing is done by the routine methods for Tuberculosis and cont. abortion.

<u>Cleaning of cows' body & exterior of udder</u>

(i) Udder, flank & final portions be cleaned with p.p. whim 1-1000 water parts and dried.

(ii) If the animal is to be groomed this must be done at best 1 hour before milking.

<u>Cleaning & sterilizing of utensils, the construction etc.</u>

The use of a dome shape pail is in practice and ordinary open mouthed pots are avoided. Usually pots with less number of pieces are preferred.

The pots be sterilized well before milking with (1) Water & then warm water & washing soda must be scrubbed well with the help of brushes. Later on boiling water be used & dried. In absence of boiling water the utensils be cleaned with chlorine water.

<u>Straincing of milk</u>

(i) In our country cloth straw is generally used.

(ii) A strainer of wire gauge is also used. It must be cleaned properly to avoid spread of diseases. Use of modern milk strainer is recommended.

<u>Cooling of milk</u>

To avoid multiplication of micro-organism it must be cooled to 40^0 - 45^0 F (optimum temp. for growth & multiplication being 37.5^oc or 109.5 F).

<u>The milker</u>

The milker should be a man of clean habits besides skilful in the act of milking. He should wear a neat cloth alongwith a head cover. He should have trimmed nails & free from contagious diseases.

Cleaning of stable or Barn. — It must be cleaned with clean water regularly and must be fly proof. The walls upto height of 3' must be cemented well.

Feed — Neat & clean of good quality be given to animals. It must be free from fungus, growth etc. Dry fodder should not be given at the time of milking.

Bottling — Bottling be done very carefully under strict aseptic conditions.

Precautions

1) Already narrated above under each item of source of infection.

2) Sterilization if Pasteurization is not possible.

3) Cooling of milk at 40°-50°F.

4) Testing of dairy herd.

5) Punishment be given to persons habituated for adulterations.

6) Preservati   be avoided.

7) Balanced ration for cattle.

References

a) Elements of Dairying by T.M.Olson (pages 438 - 441)

b) Dairy Science by Peterson (pages 543 - 544)

LESSON PLAN No.14

1. Class — V.L.Ws.
2. Subject — Horticulture
3. Topic — Cultivation of cauliflower
4. No. of periods allotted - One period of 45 minutes.
5. Objectives — To acquaint the VLWs with the method of cultivation of cauliflower.

6. Previous background of lessons taught.

   Coming from the rural areas and being adults, they have some knowledge of cauliflower cultivation.

7. Aids to be used.

   1. Black board
   2. Picture of cauliflower
   3. Seeds of cauliflower

8. Presentation of the topic:

   a) <u>Introduction</u>

   Its origin is South Europe. It has been brought under cultivation since 1860. It is a delicious vegetable. Dried flowers are used in off season.

   b) <u>Presentation of the new subject matter</u>

   i) Climate - It is a winter season crop Requires cold climate. The optimum temperature is 80F°.

   ii) Soil - It requires light loan, well drained soil with rich nutrients. It does not thrive under water logging conditions. The soil should be well pulverised. One ploughing with soil turning plough and 4 to 6 ploughing

by cultivator or dosi plough followed by Pata.

iii) Manures and manuring.

It requires heavy manuring. About 100 quintels of F.Y.M. and compost, 74 kg. Superphasphate, 94Kg. Muriate of Potash and 186 Kg. Ammonium Sulphate should be applied as Basal dressing. 186 Kg. Ammonium Sulphate in three doses should be applied as top dressing at an interval of three week or four weeks.

iv) Sowing:

Seed rate is 117 to 146 gram for one acre. Seeds are sown in the nursery 4-5 weeks before transplanting. Sowing of nursery starts from July and continues till October according to the soil and demand of the market. To have fresh crop and regular supply, continue transplanting in pieces.

Distance Plant to Plant - 1½ feet

Line to line - 2 feet.

4 oz. of seed can be sown in 272 sq. ft. in the nursery.

v) Varieties

1st early sowing - Kuwari, Early Patna
2nd Early sowing - Katki, Pusa
Main crop sowing - Agahāni
Late sowing - Snow ball, china pearl
Giant Snow ball, Halland no.16.

Irrigation

Irrigation is necessary after every 5-6 days, in early stages but the period can be extended to 10 days in the late stages.

System of irrigation - Rainy season crop furrow system, winter crop - Bed system.

Inter-culture

2-3 weeding and hoeings are necessary for the winter season crop. Weeding at regular intervals is necessary in rainy season crop.

Yield

The crop becomes ready for harvest after three months and yield is 300-400 mds per acre or 8000 to 10,000 heads/ acre.

Pests

Cabbage butterfly - Dust 5% BHC Aphis - spray diazinon 1:600.

Diseases

Damping off - Spray 0.5 percent copper fungicide and treat the seed with Agrosen G.N. 3:1000 ratio.

Testing and check up

1. What are the different varieties of cauliflower?
2. What are the manurial dose and time of application?
3. What is the seed rate of cauliflower?
4. What are the pests and diseases that attack the cauliflower crop and their control measures?

Assignments

To study the cultivation of cauliflower in their kitchen gardens.

References

1. Udyan Vigyan by K.B. Gupta
2. Shashya Vigyan by A.S. Yadva Page No. 32 to 37.
3. Nutrition value of Indian Foods and Planning of satisfactory diet by W.R. Aykroyd. Page No.50 to 119.

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LESSON PLAN No.15

1. Class — V.L.Ws.

2. Subject — Horticulture

3. Topic — Factors affecting the selection of site for laying out an orchard.

4. No. of periods allotted. — One (45 minutes)

5. Objectives
   1. To impart knowledge about the factors which affect the cultition of fruit plans.
   2. To get the Gram Sewaks aquented with the practical problems, so that they may be able to guide the fruit growers.

6. Previous back ground.
   1. Have already been told about the importance of fruits.

7. Aids to be used
   1. Black Board
   2. Flannel strips

8. Presentation:

a) Introduction

1. Fruit growing is a long term enterprise involving a good amount of initial capital.

2. Fruit crops differ in their soil requirements etc. from the crop plants and hence require greater attention for selection of the side for growing fruit plants.

b) Presentation

The following are the factors which are to be considered while selecting the site for laying out an orchard:-

i) Soil: Only such land should be selected which has 5, 6' depth.

ii) Loamy or sandy loan texture.

iii) PH - value from 6 - 8.

iv) Complex drainage

v) Water table below 10' - 15'.

vi) Concentration of sodium salt below 0.1 %.

vii) No kankar or murar in sub-soil.

2) CLIMATE: The success of the orchard greatly depends on the local climate, because all fruit plants do not suit to only one type of climate.

The climate consists:-

a) Rains.
b) Temperature.
c) Atmospheric Humidity.
d) **Winds** - Hot and cold and
e) Hailstorms.

From climatic point of view the fruit plants can be classified into following 3 categories:-

i) Temperate fruits : - Apple, pear, Almond, Walnut, Peach etc.

ii) Sub-topical:- Temperature not below 25 F°. orange, lamen, phalsa, litchi, fig, grape,

iii) Tropical:- Mango, banana, Pappya, Jack fruit, etc. The above classification is not very hard and fast. A fruit like grape can be grown in temperate and sub-tripical region can while pappya can grow both in sub-tropical and and tropical.

3. <u>Source of Irrigation</u>

Irrigation for the orchard is very essential in most of the case and the water should be soft.

4. MANURE:-

Cheap organic manure should be available in the locality.

5. TRANSPORTATION:-

It is an important factor which is to be considered before laying out of an orchard, otherwise:

a) the produce will get spoiled.

b) the profit will be less.

c) More time will be wasted.

6. MARKETING FACILITIES:-

There should be a good demand in the near by market for disposing off the fruit plants, so as to obtain a good deal of profit.

7. AVAILABILITY OF LABOUR:

Cheap labour should also be available in the locality, because a plenty of labour is needed for cultivation of fruit plants.

8. GOOD NEIGHBOUR:

Human beings in the locality should be of cooperative nature and not of destructive and jaylousy feelings.

a) Protection from the wild animals:

b) Application:-

i) You must help the farmers in selecting the land and fruit plants best suited to the locality.

ii) By applying this knowledge the fruit growers will get the success in the enterprise and will get good profit.

c) RECAPITULATION AND SUMMARIZATION:

i) Now you know the importance of the factors which affect in selection of the site for an orchard.

ii) Fruit plants should be selected best suited to the soil and climate of the locality.

iii) Other factors are also to be considered as for as possible.

d) TESTING ANC CHECKING UP:

i) What type of land should be selected?

ii) Name the fruit plants suited to different types of climate?

iii) How transportation affect the growing of fruit plants?

9. <u>ASSIGNMENTS</u>:

i) Visit and study 2-3 near by orchards and see how they are suited to the soil and climate of the locality and whether other points have also been taken into consideration or not?

10. <u>REFERENCE</u>:

i) Fruit culture in India by Dr. Singh, Krishnamurthi and Katyal.

ii) Principles of fruit growing by Yawalkar.

iii) Horticulture guide by K.K. Agarwal.

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METHOD DEMONSTRATION

Each participant was given the assignment of preparing a plan for method demonstration in his own subject-matter field. Of the efforts of the participants nine have been selected and are included in the following pages. These plans have been demonstrated in the campus before a group of fellow-workers. Through discussion and analysis a learning situation was created for them.

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APPRAISAL FORM
(Method Demonstration)

Name of Instructor ______________ Name of observer ______________

Title of demonstration ______________

Date ______________ Time ______________

Points to be observed		Score	Rating
1. Personal: Appearance	-	5	___
Attitude	-		
Delivery	-		
Approach	-		
2. Teaching ability: Interest	-	7	___
Style	-		
Attention	-		
3. Arrangement of the group so that all can see and hear clearly	-	3	___
4. Proper arrangement of the required materials, tools and equipment on hand	-	7	___
5. Keeps up time for the demonstration	-	2	___
6. Talks directly to the group	-	2	___
7. States objectives clearly	-	6	___
8. Relates the demonstration to a previous lesson taught	-	2	___
9. Maintains interest throughout the demonstration	-	8	___
10. Emphasises each key point	-	7	___
11. Performs each step with equal emphasis	-	7	___
12. Operates skillfully and with confidence	-	7	___
13. Uses supplementary aids to improve demonstrations	-	2	___
14. Emphasises safety precautions	-	5	___

15.	Summarises the demonstration	-	5	___
16.	Directs learner step by step to avoid mistakes	-	5	___
17.	Repeats the steps as many time as necessary to assure good learning	-	5	___
18.	Tests knowledge and understanding	-	5	___
19.	Asks for pertinent questions and	-	5	___
20.	Discusses possibilities of holding next related demonstration or previous next lesson.	-	5	___
			100	___

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METHOD DEMONSTRATION

Subject: Horticulture - potting.

Why the subject is important:

i) To increase the beauty of a garden/ Banglow or house.

ii) To put at such places where growing of plants is not possible.

iii) To impart knowledge about potting.

iv) To have more survival of plants.

v) To make use in exhibitions, flower shows and ornamental purposes.

List of equipment and material needed:

1. Earthern pot - 1.
2. 2-3 pot pieces.
3. Small pebbels 2 Kg.
4. Dried leaves 1 Kg.
5. Sand 3-4 Kgs.
6. Soil and compost one basket each.
7. Cocher plant.
8. Khurpi transplanting material etc.

Demonstration breakdown:

Steps	Key points
1. Wet the pot by dipping in wa-ter.	1. Dip the pot in water till the bubbels stop
2. Put a piece of pot on the hole of the pot at the bottom.	2. The pot should be filled in more carefully.
3. Fill first layer of the pot by kanker upto 3.5 to 4 cms.	3. About 2.5 to 3 cms. pot should be kept empty. Compact the soil after filling.
4. On the kanker layer the dried leaves should be filled in and pressed. The layer of leaves should be 3-4 cms. thick.	4. Dip the plant gently into wa-ter so as to wash the soil ball.
5. The third layer should be filled in with sand (about 2-3 cms.)	5. Press the soil around the plant.
6. Finally the soil compost mixture should be prepared in the ratio of 1:3 and filled in the pot.	6. Potting should be done in evening.

7. Lift the plant from nursery without injuring the roots.

8. Make a small pit in the centre of the pot for planting the lifted plant.

9. Plant the plant in the pot accurately and straight.

10. Water the plant gently by watering can.

7. The pot should be kept in shade after potting.

8. The pot should only be put in the garden/house when the plant is in its full bloom.

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METHOD DEMONSTRATION

Subject: Plant protection.

Topic: Preparation of 0.02% of Endrine solution for use against cotton pests.

Objective:

1. Use of insecticide as prophelytic measure against spotted, boll worm, pink boll worm, red cotton bug, aphid & jaisids.
2. To educate the farmers to adopt plant protection schedule as prophelytic measures.
3. How to prepare solution of desired strength.

List of equipment: (i) Bucket (ii) Endrine (iii) Water (vi) Soap. (v) Measuring jar.

Demonstration break down:

Steps	Key points
(i) Determination of quantity of solution required.	(i) Calculate the quantity of insecticide by the following formula:
(ii) Work out the quantity of Endrine to be used in 10 litres of water.	Quantity of sol. required × desired strength of sol. / strength of Insecticide available.
(iii) Mixing of Endrine in water. Take measured quantity of water (10 litres) and 0.01 litre endrine and mix it with a wooden rod.	$\frac{10x0.02}{20} = 0.01$ litre. (ii) Do not stir the solution with the hand. Always use wooden rod. (ii) Avoid contact of insectide with the skin.
(iv) Filter the solution if necessary.	

Precautions after use:

i) Wash all the equipment with water immediately after its use.

ii) After preparing the solution wash the hands with soap.

iii) While preparing or spraying the solution do not eat or drink without washing hands thoroughly.

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METHOD DEMONSTRATION

Subject: Deep litter system.

Why the subject is important:

1. Safety of birds & eggs.
2. Hot weather safeguard.
3. Labour saved.
4. Controls vices & diseases.
5. Supplements saved to some extent.

Place, date & time: Newly constructed poultry house on 16.6.67 from 12.00 to 1.00 p.m.

List of equipment and material:

1. Rice husk or ground nut hulls or cotton seed hulls, wheat barley or oat Bhusa, or finely cut dry grass or rice straw or sugarcane fibre or saw dust or wood shavings or dry leaves or cut & broken cobs or maize & jowar stalks or dry sea weeds.
2. Bucket one.
3. Kassi.
4. Clean dry earth.

Demonstration break down:

Steps	Key points
1. Before putting fresh litter material on the floor & remove all old litter & debris.	No need when the houses are new ones.
2. Throughly clean, scrap, scrub wits boiling hot water & disinfectant to the floor, walls, internal fittings & equipment wits 5% solution of Cresol or crude Carbolic acid.	

3. Spray insecticide such as D.D.T., B.H.C. or Pyrethrine oil base preparations for the control of ticks & mite.	
4. Allow sufficient time for the premises, fittings & equipments to get dry.	
5. Put a 5 to 8 cm. layer of clean dry earth on the cemented or brick floor & press it firm.	Do not use moist earth.
6. Over this layer of earth spread a 8 to 10 cm. thick layer of rice husk.	Do not put more than 8-10 cm. in summer.
7. Do not add any more material during the Summer & rainy months except when wet patches are to be replaced.	
8. After the rainy season is over gradually add thoroughly mix more litter material in order to bring its thickness to 15 to 20 cm. by the end of November.	
9. Maintain this thickness throughout the winter months & again reduce it to 8 to 10 cm. during summer & rainy months.	

METHOD DEMONSTRATION

1. Subject.	Home Management.
2. Topic.	Construction of smokeless Chullha.
3. Why the subject is important?	1. It gives the clean view of kitchen and house. 2. It saves energy and time of home maker in preparation of food. 3. Saves the eyes. 4 Economy in fuel. 5. It requires some efforts and less money.
4. Place, date and time.	E.E.I.Nilokheri.

5. List of equipment and material:-

Material required.	Equipments.
1. Bricks 1 dozen.	1. Measuring scale:- 1"
2. Pebbles - half bucket.	2. Pointed hammer :- 1
3. Clay - One and half bucket.	
4. Hay - Half bucket.	
5. Iron rods - eight (8" length)	
6. Pipe - Length 10' Diagramme 4"	

6. Demonstration breakdown:-

Steps	Key points
1. Select a place in your kitchen for the construction of smokeless chullha.	Don't select a place where chimini is not possible.
2. Sprinkle water on clay to soften it.	Don't put more water while mixing clay and hay.

3. Mix clay and hay with the help of water and spread on the vary place for giving slop.	Knead the clay thoroughly otherwise it will crack.
4. Dug a whole 3" deep in U shape where chullha is to be constructed and fix small iron rods at the distance of 1".	
5. Construct chullha of that size which is useful to you and make a ' Angithi' on its back side. Leave a passage for smoke mid between the chullha and Angithi.	
6. Make a smoke channel on the back side of 'Angithi' having passage for smoke.	
7. Fix a chimni on the smoke channel.	Chimini should not have any side whole.
8. Cover the upper side of the chimini leaving holes as desired around it.	Cover the Angithi ~~mfxit~~ if it is not needed.
9. Use chullha and Angithi both while cooking.	

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METHOD DEMONSTRATION

1. Subject-topic. — Cheap nutritive Dalia.

2. Why the subject is important?

   1. To give a better knowledge of balanced food habits.
   2. Protection from malnutrition.
   3. Save time, energy and money in cooking.

3. a. Place. - Dining hall.

   b. Date - 24-6-67

   c. Time. - 3.00 PM

4. List of equipments and materials needed: -

Equipments.		Material:
Stove with kerosin oil	- 1	Dalia (Hy.Maize/wheat) 1/2 Kg.
Match box	- 1	Onions - 3
Duster/hot pad	- 1	Pea nuts(whole) - 1/4 Kg.
Enammelled basin	- 1	Tomatores, potatoes, Tinda , beans, palak etc. - 1/2 Kg.
Bucket	- 1	
Mug	- 1	Zeera (cumin) - 2 table spoon
Soap cake with case	- 1	Lemon - 2.
Towel	- 1	Salt - to taste.
Table spoon	- 1	Black papper powder with garam masala - To taste.
Sauce pan 4 Kg capacity with lid.	- 1	Green chillies. - 6
Knife	- 1	Ghee - 2 table spoon.
Thalies	-2	
Donga	- 1	
Serving spoon	- 1	

5. Demonstration breakdown:-

1. Introduction.

2. Small speech on balanced diet, importance of pea nut, cereal and vegetable.

3. Actual demonstration.

a. Loosing the jackets of the pea nuts.

b. Washing hands.

c. Peel and cut the vegetables and onions.

d. Fry pea nuts, cumin and onion in ghee.

e. Put vegetables, dalia, and water and salt in it.

f. Let it cook on moderate fire.

g. Let it simmer in its steam.

h. Put garam masala, chillies and corinder leaves.

i. Serve a bit hot.

6. Summarization.

7. Question and answers if any.

1. Wash the vegetables before cutting otherwise some nutrients are lost.

2. Cut the vegetables at the time of cooking :

3. Fry the pea nuts otherwise it is hard to digest.

4. Use stainless knife to avoid the loss of nutrients from the vegetables.

5. Cut the vegetables in big size.

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METHOD DEMONSTRATION

1. Subject and topic. — Horticulure.

2. Topic. — Layout of Mango orchard (square system).

3. Objective.

   1. To impart the knowledge of layout of orchard by **square** system.
   2. To make the best use of land and beautify it.
   3. To give proper space to every plant for its full growth.
   4. To know the number of plants to be planted.
   5. To be acquainted with the practical problems of lay out.

4. Place, date, time. — EEI Campus, 19-6-67.

5. List of equipment and material required.

   1. Tape - 1.
   2. Cotton rope 50'- 2
   3. Iron pegs - 40
   4. Spade- 1

5. Demonstration break-up.

Important steps.	Key points.
1. Selection of base line.	1. Base line should be in front of Main road.
2. Demarcation of base line at 90° angle.	2. $3^2 + 4^2 = 5$ formula be applied to fix right angle.
3. Demarcation of one line at right angle with the base line.	
4. Allow wind break in the sides of West and 1/2 North side.	Leave a distance of 5' from the boundary line for wind break. Desi Mango, Mahuwa, Neem Shisam, etc. can be planted.

5. Mark the first line at 20 ft. distance from the boundary line on all the sides.

6. Mark the base line at 40 ft. to fix up plants.

7. Mark the adjoining line at 40 ft distance.

8. Draw lines parallel to the base line.

9. Draw lines parallel to the adjoining line.

10. The points crossing the lines lengthwise and breadthwise be marked.

11. The crossing points are the places where the plants are to be planted.

Half the distance of the plant to plant is kept for the first row of plant for the proper development on the border side.

Distance from plant to plant is 40 ft. for mangoes.

Distance from row to row is 40 ft.

Hold the rope firmly to make the line straight.

Fix up iron pegs on the crosses.

Calculation of plants in a specific area

$$\frac{\text{Area of the land in sq. ft.}}{\text{Length x breadth of the plants in ft.}}$$

For one acre

$$\frac{43560}{40 \times 40} :- 27 \text{ Plants.}$$

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METHOD DEMONSTRATION

1. Subject: Farm management extension.

2. Topic: How to interview a farmer for a farm enquiry in a survey method.

3. Objectives:
   a) To obtain objective data.
   b) To secure useful information through this technique at low cost.
   c) To make the trainees acquainted with this technique which has a special role to play in the Extension programmes.

4. List of equipment and material required:
   1. Schedules for enquiry.
   2. Writing material such as pen, ink-pot etc.

5. Demonstration break-down.

Steps	Key points
1. Establishing contact with the interviewee(farmer)	a) The interviewer should have pleasing personality, delightful manners, sweet tone and politeness. b) The interviewee should be properly greeted in a friendly way in accordance with his cultural pattern. c) The interviewer should then introduce himself. d) Commanding voice is not advantageous
2. The purpose of the interview should be explained to the interviewee in a clear way.	a) Vague questions should be avoided. b) The questions involving the usage of technical terms should be avoided.
3. Starting an interview and asking questions.	c) Questions should be asked in a logic sequence. d) Do not ask haphazard questions. e) The questions should be clear and interesting to the interviewee. f) The interviewee must be allowed to feel free and tell his story in his own way.

4. Encouraging the interviewee during the course of enquiry.	a) Show proper interest in everything that the interviewee tells. b) Some complimentery expressions which can encourage the interviewee should be used. Flattery should be avoided. c) Try to feel at ease with the interviewee and gain his confidence. d) Try to be frank and straight forward.
5. Recording relevant figures only.	a) Detail recording should be avoided. b) down only the main points.
6. Completion/closing of the interview.	a) It should never be ended abruptly. b) Main points should be repeated.

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METHOD DEMONSTRATION

Subject: Panchayat.

Topic: Election of the Pradhan of a Gram Sabha in Uttar Pradesh.

Objective: To make the village level workers acquainted with the procedure of the election of the Pradhan of a Gram Panchayat.

Equipments and material:

a) Nomination papers - 2.
b) Electoral rolls - 3.
c) Ballot papers - 20.
d) Ballot box - 1.
e) Seal & pad- 1.
f) Curtains for election booth - 2.
g) Sealing material - lac, candle, seal etc.
h) Chalf & black board.
i) Electoral withdrawal forms & result declaration forms.

Demonstration back ground:

1. Steps	Key points
1. The District Election Officer will fix date for filling of nomination papers, date of seconding, date of withdrawal and the date of election of the Gram Sabha. He also appoints staff to conduct the election.	Publicity is given by pasting the programme in the Block office & office of Gram Sabha.
2. On the fixed date candidates file nomination papers. They are scrutinised by the Asstt. Returning Officer. After the date of withdrawal preparation for conducting election are done.	The nomination paper costs Rs.12.00. The Pradhan must have attained the age of 30 years.
3. The Presiding Officer is in full charge of Polling Station. He is assisted by three Polling Officers.	The polling staff should show complete impartiality.

4. The poll starts at the fixed time. Before the poll starts the Presiding Officer sets the box ready for polling in the presnece of contesting candidates or their representatives/ agents.

If the candidates or their agents do not come in time the Presiding Officer will not wait for them.

The polling booth should be so prepared that there is no expoisure as to whom the vote has been marked to maintain secrecy.

5. Then the voter comes to cast his vote. He comes to the first polling officer who will search out the name of the voter in Sr.No. to the next polling officer who will issue the ballot paper to the voter after taking down its number. In the meantime the third polling officer will mark indelible ink in the finger of the voter.

The voter will take the ballot paper to the booth where he will mark it before the symbol of the candidate, Whom he wants to vote. Then he will fold the ballot paper and bring it out and insert it into the ballot box kept on the table before the Presiding Officer.

To maintain the law & order the police personels are deputed.
The Electoral roll is the part II register of the Gaon Sabha.

The voter should be explained well the procedure of voting.

The Presiding Officer will help the blind and infirm voters in casting their votes.

6. The poll will end at the fixed time. The slid of the box is made intact and sealed. The candidates or their agents may also be asked to seal the box. The box is then carried to the Block Headquarters.

The poll should be closed at the fixed time.

They are kept under the personal custody of the B.D.O.

7. The Returning Officer assisted by Counting Officers, is responsible for the counting of the ballot papers. The counting is done on the fixed date in the presence of the candidates or their counting agents. After counting the candidate securing highest number of votes is declared elected.

The ballot papers and other material of election are despatched to the District Office. They are kept for record.

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METHOD DEMONSTRATION

1. Subject-topic. Public Health/Disinfection of water of a well.

2. Why the subject is important?

   1. To ensure safe water supply.
   2. To prevent and control gastro intenstinal.
   3. Diseases viz. Cholera, Gastro enterities, typhoid, diarrhoea and dysentry.

3. List of equipment and material need: -

   1. Bleaching powder - 4 oz.
   2. Two buckets with a rope.
   3. Measuring tape (in feet)
   4. Weighting balance.
   5. Stirrer 6. Spoon
   7. Brick - one. 8. Mug - one.

<u>4. Demonstration breakdown:-</u>

Important steps.	Key points.
1. Selection of well to be dis-infected.	1. The tape should not be loose.
2. To measure the diameter of well.	2. The measurement to be taken in the centre.
3. To measure the depth of water in the well.	3. The rope with brick should be dropped slowly.
4. To calculate the quantity of water in the well.	

Quantity of water in the well : - 5 D^2 H.

Where D : - Diameter of the well and H:- Height or depth of water in the well.	Ratio should be one part of chlorine to one million parts of water.
5. To find out the quantity of bleaching powder required.	Spoon should be used.
6. To weigh out bleaching powder.	Stirrer and not the hand should be used.
7. To make a paste of the bleaching powder in a little quantity of water.	
8. To add more water to the paste to make solution.	
9. To add the solution to the water of the Well.	Solution should not be thrown into the well from above but the bucket should be dropped into the well with the helps of rope and mixed well.

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WORKSHOP ON VISUAL AIDS

The participants of this course during their discussions on contents of the syllabus and its treatment emphasised the need for training in media of communication. It was found that most of them had not had any opportunity to prepare and use simple A-V Aids in their day to day teaching. Some of them even were doubtful of the utility of such visual materials.

Taking into consideration these views, a three day workshop on communication was held from 19th to 21st July, 1967. The common objective of the workshop may be summarised as follows:

1. To create an interest in the importance of audio-visuals in effective teaching.

2. To make the participants feel that within available resources, it is possible to prepare visuals.

3. To provide a few skills to the participants in the preparation of visuals.

4. To provide a few skills to the participants in the preparation of visuals.

The following short talks were given:

1. Flannelgraph and charts - their importance in Extension work.

2. Flash cards - their preparation and use in Extension work.

3. Practical demonstration on the preparation of simple visuals without the help of an artist.

4. Posters and their importance in Extension work.

5. Demonstration on the preparation of simple graphics.

The participants had already been oriented before the workshop on the basic principles of learning and teaching and psychological basis of the use of A-V materials by the Lecturer in A-V Aids.

Organisation:

The group was divided into three sub-groups. Each group was attached to a consultants. The help of an Artist was also given to each group to enable them to learn the techniques of preparing simple visuals with the available materials.

Selection of theme:

The group met in the afternoon of the first day of the workshop to decide for the common theme for the preparing of visuals. After detailed dis-cussions it was decided that each group should take up a separate theme. It was felt that since different groups have different interests, this approach would be useful. Choice was, therefore, left to the individual groups. They came out with the following topics for the preparation of the set of flash cards. It was decided that each individual may prepare some visual for the two lessons that he has to present during practice teaching.

Details of the groups, the themes selected for the flash card and visuals prepared for individual lessons are given below:

Group No.1 - J.M.P.C.Paddy I-R 8

1. Sh.R.A.Pathak	Mango cultivation Potato "	Flannel strips Suspense charts
2. " R.N.Yakhmi	Different organi-sation system in orchard	Flash cards
3. " A.S.Saini	Extension progra-mmes in Jammu	Flannel strips
	Agriculture mar-keting - defects & solutions.	" "
4. " T.Ali	Methods of irri-gation	Suspense chart
	Drainage and its improvement	
5. " S.N.Pareek	Selection of site for an orchard	Flannel strips Suspense chart
	System of planting nursery	Chart

6.	Sh.B.P.Srivastava	Seed bed preparation	Chart

Group No.2 - Cooperative poultry farming

1.	Sh.Jagjit Singh	Tympanites - its courses Symptoms - prevention & treatment Art of milking	Flannel strips Posters Pie chart Posters & charts
2.	" S.Khati	Organisation of gram sabha and gram panchayat Working of panchayat	Charts "
3.	" K.C.Mittal	Cooperative farming, features etc. Membership in Cooperation.	Flannel strips Flip chart Flannel strips
4.	" K.P.Sharma	The wholesale consumers cooperative stores	" "
5.	" M.S.Devedi	Microbiology of milk	Flash cards

Group No.3 - Rickets and its cure

1.	Mrs.H.Gill	Primary health centre Thiamine for health	Flannel strips Pie-cum-suspense chart Flannelgraph
2.	Miss Chandramani	Control of house insects	" Flannelstrips
3.	Sh. S.C.Misra	Infection - its channel & communication	" " Suspense chart
4.	" C.K.Sharma	Iron functions - sources etc.	Pie chart Flannel strips
5.	" Lallan Singh	PRAI type latrine	Pie-cum-suspense chart Pictorial chart

The groups were provided all the materials required for the workshop by the Institute. They were

allotted to take visuals prepared for their lesson plans with them. The Artist helped the group here and there to visualize their thinking.

Presentation:

After each presentation the visuals were analysed by the staff, who were present in the session. The reactions brought out by the participants and the staff gave the impression that the workshop was successful in achieving its objectives. The three days session gave sufficient education to the participants to discriminate between good and bad quality and use of visuals in Extension work.

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VILLAGE PRACTICALS

The group was divided into three sub-groups and allotted to new villages. It was decided to select new villages after a period of three to four years. As the visits to these villages were for the first time projects connected with survey and collection of data were assigned to the participants. In addition topics such as writing of case studies, method demonstration, kitchen gardening projects, film reviews etc. were assigned to the participants.

No exercise under this head has been included in the village practicals as a separate booklet on case studies is being brought out. The other assignments pertain to details that would be necessary for village statistics and projects.

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STUDY TOUR

For the study tour a successful Gramsevak Training Centre was selected in Madhya Pradesh. The group visited the Gramsevak Training Centre at Powarkheda and the Rice Research Station. At the G.T.C. different aspects of training were allotted to sub-groups for study and collection of data. In addition a case study regarding a V.L.W in the field was assigned to each sub-group. The entire group of participants was divided again into five sub-groups.

During their stay at the G.T.C. each sub-group was able to interview the Instructors concerned, the V.L.W, progressive farmers, the Block staff and those connected with the V.L.W training programme. Through observation and the interview technique each group was able to write a report on the methods adopted in the training programme.

This process enabled the participants not only to study at the first hand a successful G.T.C. of another State but they were also able to contribute their own experience to the teaching staff of the Training Centre. The staff discussions were a great help to the visiting group of Instructors as well as the teaching staff of the G.T.C. The opportunity for mutual exchange of ideas regarding the methods of training was a good learning situation. In addition the study of the V.L.W of a different State in the field provided a deep insight to the visiting Instructors regarding the problems and the methods of overcoming these problems by the V.L.W concerned.

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LIST OF PARTICIPANTS

1.	Shri Jagjit Singh Dawra	Instructor in A.H., Gram Sevak Training Centre, Batala	Punjab
2.	Shmt.Harbans K. Gill	Assistant Instructress, G.T.C., Nabha	"
3.	Kumari Chandrmani Malhotra	Instructress, G.T.C., Batala	"
4.	Shri Tayyeb Ali	Asstt. Agriculture Engineer, G.T.C., Sawai -Modhopur	Rajasthan
5.	Shri Satya Narain Pareek,	Instructor in Agri., G.T.C., Tilaunia, Ajmer	"
6.	Shri Rabinder Nath Yakhmi	Instructor in Agri., G.T.C., Garhi, Banswara	"
7.	Shri Kamta Prasad	Instructor in Cooperation, G.T.C., Sawai- Madhopur	"
8.	Shri Krishna Chandra Mittal	Instructor in Cooperation, G.T.C., Asafpur, Bedaun	U.P.
9.	Shri Lallan Singh	Instructor in P.H., G.T.C., Ghazipur	"
10.	Shri Surendra Pal Singh Khati	Instructor, G.T.C., Hawalbagh, Almora	"
11.	Shri Satish Chandra Misra	Instructor, G.T.C., Faizabad	"
12.	Shri Ram Iqbal Pathak	Extension Training Officer G.T.C., Kalakankar, Pratapgarh	"

13. Shri Chandra Kishore Sharma,	Instructor in P.H., G.T.C., Baraut, Meerut.	U.P.
14. Shri Mahabir Sharan Dwivedi	S.I.A.H. (Vety. Officer) G.T.C., Rampur-Maniharan (Saharanpur)	"
15. Shri Bhagawati Prasad,	Vice-Principal(E) G.T.C., Gorakhpur	"
16. Dr. A.S. Saini	Asstt. Professor, Govt. Agri. College, Ranbir-Singh-Pura	J&K

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LIST OF GUEST SPEAKERS

1. Sh. G.S.Baweja.	Joint Director, Directorate of Extension.
2. Sh. Badri Singh.	Joint Director, Directorate of Extension.
3. Mrs. S. Dantyagi.	Joint Director (Home Science), Directorate of Extension.
4. Dr. O.P.Kapoor.	Medical Officer, Primary Health Centre, Nilokheri.
5. Dr. Ram Das.	Chief Nutrition,UNICEF New Delhi.
6. Miss Tara Bahel	Deputy Development Commissioner, Punjab, Chandigarh.
7. Dr. C.P. Shastry	Crop production specialist, Directorate of Extension.
8. Sh. H.P. Tandon	Poultry specialist, Directorate of Extension.
9. Sh. Harbans Singh	Animal Husbandry specialist, Directorate of Extension.
10. Sh. M.L.Taneja	Specialist Agricultural Implements, Directorate of Extension.
11. Dr. H.S.Mann	Crop production specialist, I.A.D.P.
12. Prof: Udai Shankar.	Principal, College of Education, Kurukshetra University, Kurukshetra.
13. Dr. Cassidy	F.A.O. Specialist, Directorate of Extension.
14. Dr. Parsai	Horticulture specialist, Directorate of Extension.
15. Dr. H.K. Mishra	Reader, Psychological Foundations, New Delhi.
16. Shri S.S.Gill	Principal, Haryana State Community Development Training Centre, Nilokheri.

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LIST OF TEACHING STAFF

1.	Dr.Herbert W.Butt	Principal
2.	Sh.C.L.Gupta	Lecturer in Audio-visual Aids
3.	" H.Mahabaleshwariah	Lecturer in Agricultural Economics and Farm Planning
4.	" T.M.Dak	Lecturer in Rural Sociology
5.	" R.D.Kaushik	Superintendent, Refresher Training Unit
6.	" Baldev Singh	Instructor in Agriculture
7.	" A.K.Chakravarty	Chief Instructor Agricultural Workshop
8.	" H.C.Luthra	Design Engineer

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